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2021-22

Undergraduate Bulletin



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VCU

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UNDERGRADUATE BULLETIN

The Virginia Commonwealth University bulletins are published yearly for each of the student populations served by the institution. The Undergraduate Bulletin contains information about university policies, course descriptions and academic requirements for the programs offered to undergraduate students.

ABOUT VCU

Located in the heart of Richmond, the capital of Virginia since 1779, Virginia Commonwealth University serves an integral role in the economic health of the city and the state, educating the current and future workforce, reaching out to the community, advancing research and enhancing patient care.

VCU was founded in 1838 as the medical department of Hampden-Sydney College, becoming the Medical College of Virginia in 1854. In 1968, the General Assembly merged MCV with the Richmond Professional Institute, founded in 1917, to create Virginia Commonwealth University.

Today, VCU offers comprehensive undergraduate, master's, doctoral and professional programs and encompasses one of the largest academic health centers in the nation. With \$335 million in externally funded research awards for the 2020 fiscal year, VCU is one of only 71 institutions in the country with an academic medical center to be designated by the Carnegie Foundation as "Community Engaged" with "Highest Research Activity." Its centers and institutes of excellence support the university's research mission and involve faculty from multiple disciplines in the arts, public policy, biotechnology and health care discoveries.

VCU enrolls more than 29,000 students in more than 200 degree and certificate programs in the arts, sciences and humanities. Twenty-two of the programs are unique in Virginia, many of them crossing the disciplines of VCU's 11 schools and five colleges. VCU has a full-time instructional faculty of more than 2,500 who are nationally and internationally recognized for excellence in the arts, business, education, engineering, the humanities, the life sciences, social work and all the health care professions. With more than 23,000 employees, VCU and VCU Health also have a significant impact on Central Virginia's economy.

Through the guidance of its strategic plan, Quest 2025, VCU is working to meet the demands of diverse populations through impactful research and creativity, rigorous study, and extensive community engagement and is taking its place among the nation's premier urban, public research universities.

VCU and the VCU Health System have been honored with prestigious national and international recognition for top-quality graduate, professional and medical-care programs, reflecting a commitment to be among America's top research universities, supporting students, faculty and the VCU community.

Nondiscrimination

VCU does not discriminate in admissions, treatment, employment or access to its programs or activities on the basis of race, color, religion, national origin (including ethnicity), age, sex (including pregnancy, childbirth and related medical conditions), parenting status, marital status, political affiliation, veteran status, genetic information (including family medical history), sexual orientation, gender identity, gender expression or disability, consistent with applicable law.

VCU's notice of nondiscrimination and nondiscrimination policies, with contact information for the office and individuals responsible for enforcement, are in the university's policy library (<https://policy.vcu.edu/>).

Administration

VCU administration provides leadership and organizational structure for the university, overseeing its goals and mission. Refer to each unit's website (<http://atoz.vcu.edu/administration/>) for a current listing of administrators.

Deans

Deans provide leadership for their respective school or college. Refer to each unit's website (<http://atoz.vcu.edu/academic+departments/organizations/>) for a current listing of its deans, departmental chairs and program heads.

Accreditation

Virginia Commonwealth University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, master's and doctoral degrees. Questions about the accreditation of VCU may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (<https://www.sacscoc.org/>).

Academic program accreditation

See the college/schools for detailed information about program accreditation.

Specialized program accreditation or certification

Campus Police

Police Department
International Association of Campus Law Enforcement Administrators

Police Academy
Certified by the Virginia Department of Criminal Justice Services

Division of Student Affairs

University Counseling Services
American Psychological Association

Student Health Services
Joint Commission on Accreditation of Health Care Organizations

Hospital accreditation

VCU Health System
Joint Commission on Accreditation of Healthcare Organizations

Mission statement

Virginia Commonwealth University and its academic health sciences center serve as one national urban public research institution dedicated to the success and well-being of our students, patients, faculty, staff and community through:

- Real-world learning that furthers civic engagement, inquiry, discovery and innovation
- Research that expands the boundaries of new knowledge and creative expression and promotes translational applications to improve the quality of human life

- Interdisciplinary collaborations and community partnerships that advance innovation, enhance cultural and economic vitality, and solve society's most complex challenges
- Health sciences that preserve and restore health for all people, seek the cause and cure of diseases through groundbreaking research and educate those who serve humanity
- Deeply engrained core values of diversity, inclusion and equity that provide a safe, trusting and supportive environment to explore, create, learn and serve

Oak Ridge Associated Universities Consortium

Since 1963, students and faculty have benefited from VCU's membership in Oak Ridge Associated Universities, a consortium of 115 colleges and universities and a contractor for the U.S. Department of Energy. ORAU works with its member institutions to help students and faculty gain access to federal research facilities, to keep its members informed about opportunities for scholarship and research appointments and to organize research alliances among its members.

Faculty, graduate students and undergraduate students may access a wide range of opportunities for study and research, including the Lindau-Nobel Laureates and Powe Junior Faculty programs. Many of these programs are designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines.

For more information about ORAU and its programs, contact:

- P. Srirama Rao, Ph.D., ORAU Councilor for VCU
(804) 827-2262
- Monnie E. Champion, ORAU Corporate Secretary
(865) 576-2206

Interested parties may also visit the ORAU website at [orau.org](http://www.orau.org) (<http://www.orau.org>).

VCU Health System Authority

In April 1996, Gov. George Allen signed legislation that established the Medical College of Virginia Hospitals Authority. Effective July 1, 1997, the operations, employees and obligations of MCV Hospitals (formerly a division of VCU) were transferred to the Authority. Three years later, in connection with legislation signed by Gov. James Gilmore, the MCV Hospitals Authority became the Virginia Commonwealth University Health System Authority. The clinical activities of MCV Hospitals, MCV Physicians and the VCU School of Medicine are now coordinated and integrated by and through VCU Health.

The VCU Health System Authority is charged by statute with the missions of operating MCV Hospitals as teaching hospitals for the benefit of the health sciences schools of VCU, providing high quality patient care and providing a site for medical and biomedical research, all of which missions are required to be performed in close affiliation with the Office of the Vice President for Health Sciences. VCU's vice president for health sciences also serves as the CEO of the VCU Health System Authority, and five VCU faculty physicians serve as members of the VCU Health board of directors.

Board of Visitors

The Board of Visitors is the voting body of Virginia Commonwealth University. Each year, the governor of Virginia appoints members. Refer to Office of the President's website (<http://www.president.vcu.edu/board/>) for a current listing of board members.

Determination of student classification for in-state tuition purposes

Tuition is determined by the number of credit hours a student is taking, the student's residency classification, course of study and classification level. For in-state tuition benefits, the student must comply with the Code of Virginia (<https://law.lis.virginia.gov/vacode/title23.1/chapter5/>) regulations relative to in-state tuition and reduced rate tuition eligibility.

All applicants to VCU who wish to be considered for in-state tuition rates as Virginia residents must submit the Application for Virginia In-state Tuition Rates. This application is a part of the admissions packet and the nondegree-seeking student enrollment package. The residency determination of the applicant is conveyed at the time of admission as a degree-seeking student or nondegree-seeking student.

New and continuing students initially classified as non-Virginians for tuition purposes may request a review of the initial residency determination by completing an Application for Change of Domicile available from the Office of Records and Registration (online). The student must present clear and convincing evidence that they are not residing in the state primarily to attend school. The application deadline is the end of the add/drop period of the semester, and it is the responsibility of the student to establish or to file an appeal to change their residency classification prior to the start of classes for the semester under consideration. In accordance with the Code of Virginia, applications received after the deadline must be considered for the next semester. Submit completed applications with documentation to the university residency appeals officer. Processing may require four to six weeks; therefore it is strongly recommended that applications be submitted earlier than the stated deadline.

The university's service to students is limited to assuring that they understand the procedures for appealing and that they have access to information about the relevant sections of the Code of Virginia. The university provides information about the steps of the process and access to the applicable sections of the statute and the associated guidelines. The university provides qualified staff to review the appeals and make decisions based on the information students provide. The university representative cannot provide advisement to students as to how to present their case for review; neither can they become the student's advocate since these university representatives must make the decision.

Students approved for a change to in-state status for tuition purposes are notified by mail with copies of their approval letters sent to the Office of Financial Aid and the Office of Student Accounting. Students denied this status are also notified by mail. The denial letter informs the student of procedures for appeal of this decision, to include filing an appeal with the university residency appeals committee. Students who submit fraudulent applications, falsify documentation or conceal information will be subject to reclassification, payment of all nonresident fees owed and university discipline.

Please note that a student with in-state status for tuition purposes who exceeds 125 percent of the credit hours needed to complete his program will be assessed a tuition surcharge.

Rights of students under the Family Educational Rights and Privacy Act

Pursuant to a federal statute enacted to protect the privacy rights of students (Family Educational Rights and Privacy Act of 1974 [FERPA], as amended, enacted as Section 438 of the General Education Provisions Act), eligible students of Virginia Commonwealth University are permitted to inspect and review education records of which the student is the subject. A statement of university policy concerning inspection and disclosure of education records has been formulated in compliance with the federal statute. Copies of the policy also are available from the Office of Records and Registration with additional information on their website (<https://rar.vcu.edu/records/family-educational-rights-and-privacy-act/>).

Generally, the act provides that no personally identifiable information will be disclosed without the student's consent, except for directory information and information to other school officials with a legitimate educational interest. When personally identifiable information, other than directory information, is disclosed, a record will be maintained of these disclosures. This record also is available for inspection and review by the student.

If an eligible student feels that his or her education record is inaccurate, misleading or otherwise in violation of the student's privacy or other rights, the student may request an amendment to the record.

Should the university fail to comply with the requirements of the act, the student has the right to file a complaint with the Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Ave., S.W., Washington, D.C. 20202-5901.

Parental notification amendment

Amendments to FERPA signed into federal law in fall 1998 specifically allow notification to the parents or guardians of students under the age of 21 who violate any law or university rule regarding use or possession of alcohol or other controlled substance. The Virginia Attorney General's Task Force on Drinking by College Students also recommended such notification in its 1998 report.

In accordance with these documents, a parental notification procedure has been included in the VCU Drug Free Schools and Workplace Policy.

Consumer information

The federal Higher Education Opportunity Act of 2008 requires that institutions of higher education disclose certain consumer information to current students, prospective students, current employees and/or prospective employees. This consumer information (<https://irds.vcu.edu/consumer-info/>) for VCU is maintained by the Office of Institutional Research and Decision Support.

ACADEMIC REGULATIONS

This section of the Bulletin covers academic regulations and includes universitywide policies, which pertain to all students, as well as those specific to undergraduates and graduate students.

It is the responsibility of all students, both on- and off-campus, to be familiar with the academic regulations in individual school and department publications and on program websites; however, in all cases, the official policies and procedures of the university, as published on this website, take precedence over individual program policies and guidelines.

Students are also subject to any policy changes approved by the university for immediate implementation and published on the Bulletins website for the current academic year.

Universitywide regulations

Regulations presented in this section apply to all VCU students unless otherwise noted. Use the navigation to the left to see additional regulations that are specific to the level of study.

Current mailing address

Every VCU student is responsible for keeping a current mailing address on file with the Office of Records and Registration. Please verify your current address on eServices (<https://my.vcu.edu>).

If a student's mailing address is not accurate, the student should use eServices (<https://my.vcu.edu>) to make changes. Students may also submit any change of address in writing to the Office of Records and Registration, Harris Hall, Box 842520, Richmond, VA 23284-2520 or in person at the Records and Registration Student Services Center in Harris Hall, 1015 Floyd Ave, 1st Floor, Room 1004.

All official mailings are sent to the permanent address on file in the Office of Records and Registration.

Email is considered an official method for communication at VCU because it delivers information in a convenient, timely, cost-effective and environmentally aware manner. Mail sent to a student's VCU email address may include notification of university-related actions, including disciplinary action. Students who use email addresses other than their required name@vcu.edu email address also must check their name@vcu.edu address frequently for official messages from the university.

Attendance

The instructional programs at VCU are based upon a series of class meetings involving lectures, discussions, field experiences, special readings and reporting assignments. Therefore it is important for each student to be in attendance on a regular basis. A student who misses a class session is responsible for completing all material covered or assignments made during the absence.

Students must be informed in writing of the attendance requirements and the corresponding consequences of poor attendance for the courses and/or program in which they are enrolled. Though the attendance requirements may vary widely from one course to another, students must abide by these requirements. Students cannot enroll in two courses

that meet concurrently without written approval from the chair of each department involved.

Consequences of poor attendance

Students having attendance problems should contact the instructor to explain the reasons for nonattendance and to discuss the feasibility of continuing in the course. If the student has fallen so far behind that the successful completion of the course is impossible, the student should withdraw from the course before the withdrawal deadline as published in the VCU academic calendar (<https://academiccalendars.vcu.edu/>).

If the student continues to miss class and does not officially withdraw from the course, the instructor may withdraw the student for nonattendance with a mark of W before the withdrawal deadline as published in the VCU academic calendar (<https://academiccalendars.vcu.edu/>) or may assign an academic grade at the end. Withdrawals are not permitted after the published withdrawal deadline. For classes that do not conform to the semester calendar, the final withdrawal date occurs when half of the course has been completed. Withdrawal dates for summer session classes are provided on the Summer Studies Calendar (<http://www.summer.vcu.edu/calendar/>).

Religious observances

It is the policy of VCU to accord students, on an individual basis, the opportunity to observe their traditional religious holidays. Students wishing to observe a religious holiday of special importance must provide advance written notification to each instructor by the end of the second week of classes. On these dates, instructors are encouraged to avoid scheduling one-time-only activities that cannot be replicated. Through such strategies as providing alternative assignments or examinations, granting permission for audio or video recordings or the use of the Internet, faculty members are expected to make reasonable academic accommodations for students who are absent because of religious observance.

Mandated short-term military training

Students called to report for mandated military training must provide advance written notification to each instructor several weeks in advance of training. Faculty members are expected to make reasonable academic accommodations for students who are absent because of mandated short-term military training (short-term is defined as several days not to exceed two weeks).

Course drop vs. withdrawal

A student may drop a class through the end of the add/drop registration period. When a class is dropped, the registration and associated tuition/fee charges are cancelled. Drop charges are removed to indicate that the student never attended the class or never attended the class beyond the add/drop registration period.

A student may withdraw from a class up to the withdrawal deadline as published in the university academic calendar (<http://www.vcu.edu/academiccalendars/>). Withdrawal from a course does not cancel the registration or the associated tuition/fee charges and results in the assignment of the grade of W. Refunds, if applicable, are issued in accordance with procedures described in the refunds section of the tuition and student fees (<http://bulletin.vcu.edu/graduate/study/graduate-tuition-student-fees/drop-vs-withdraw/>) section of this bulletin.

In both situations, any financial aid already disbursed to the student's account based on the original course registration will be assessed and

adjusted according to the university refund policy and may result in a balance due to the university.

Student conduct in the classroom

The instructional program at VCU is based upon the premise that students enrolled in a class or clinic are entitled to receive instruction free from interference by other students. Accordingly, in classrooms, laboratories, studios and other learning areas, students are expected to conduct themselves in an orderly and cooperative manner so that the faculty member can proceed with customary instruction. Faculty members (including graduate teaching assistants) may set reasonable standards for classroom behavior in order to meet these objectives. If a student believes that the behavior of another student is disruptive, the faculty member should be informed.

If a faculty member believes that a student's behavior is disrupting the class and interfering with normal instruction, the faculty member may direct the student to leave the class or clinic for the remainder of the class period. In such circumstances, the faculty member is the sole judge that the student's behavior is sufficiently disruptive to warrant a temporary dismissal from the classroom or clinic. Disruptive behavior on the part of the student may result in the filing of formal charges under the university's Rules and Procedures document (<https://policy.vcu.edu/universitywide-policies/policies/rules-and-procedures.html>).

Grade review procedures

Students have a right to appeal course grades they consider to have been arbitrarily or capriciously assigned or assigned without regard for the criteria, requirements and procedures of the course stated in the syllabus or guidelines for assignments. Grades determined by actions under authority of the VCU Honor System may not be appealed through this procedure, nor may dismissals that have occurred as a result of correctly derived course grades.

Though the faculty has the responsibility for assigning grades on the basis of academic criteria, such grade designations can sometimes raise conflicts. Thus, while affirming the importance of maintaining standards of excellence and the integrity of the teaching/learning process, the university and its faculty also recognize that, on occasion, grades may be inappropriately assigned. Should such conflicts occur, students have a right to be fairly heard. When discrepancies occur concerning the grading process, the welfare and integrity of both faculty and students are equally important. This document is in no way intended to compromise the work of the faculty.

The faculty member (or members, in the case of a jointly taught course) bear the responsibility for specifying in writing at the beginning of each class section the formal requirements of the course and the weights that will be employed in determining the final course grade. The faculty member(s) shall apply relevant grading criteria uniformly to all members of the class.

Grades received through the grade review procedure are final and may not be appealed.

Initiating an appeal

When a student has evidence that a final grade has not been assigned in accordance with the stated criteria, the student shall discuss it first with the faculty member. The faculty member will explain how the final grade was determined. If the student continues to feel that the grade was incorrectly assigned, a written appeal may be submitted to the chair

of the department in which the course was taught. Students appealing grades assume the burden of proof. The appeal shall state and support with all available evidence the reasons why the student believes the grade should be changed. For grades awarded for the fall semester, the written intent to appeal must be submitted no later than 14 calendar days after the beginning of the spring semester. For grades awarded for the spring semester or summer sessions, the written intent to appeal must be submitted no later than 14 calendar days after the first day of the fall semester. For schools that have a summer session or other less common sessions, school policies may specify other deadlines to ensure a timely appeal. Appeals submitted after the deadline will be heard only in exceptional cases, as determined by the appropriate vice president.

The grade issued by the faculty member shall remain in effect throughout the appeal procedure. In instances in which the failing grade is in a prerequisite course in which safety or well-being of clients, patients or the public is involved, the student shall not be allowed to enroll in the subsequent courses in which safety and well-being may be at issue until and unless the appeal is resolved in the student's favor. In these cases, the student who wishes to appeal is advised to do so as soon as possible and it is the responsibility of the school to move the appeal process expeditiously.

Mediation

The chair of the department shall attempt to mediate an amicable solution within two weeks of receipt of the written appeal. If the complaint is not resolved, the chair shall forward the student's appeal to the dean (or appropriate associate/assistant dean)¹ of the school in which the course was taught. The chair also shall submit to the dean in writing the recommendation made to the two parties regarding the appropriateness of the grade. If the grade being appealed was assigned by the chair of the department, the dean shall assume the mediation responsibility. If the grade being appealed was assigned by the dean, the mediation responsibility will fall to the appropriate vice president.

¹In instances in which the dean of the school chooses for the appropriate associate/assistant dean to manage the grade appeal, the term "associate/assistant dean" may be substituted for the term "dean" throughout this document.

Grade review committee

The dean shall form a grade review committee and designate the chair. The committee has the option of either raising the grade or leaving the grade unchanged.

The committee shall consist of one nonvoting faculty chair, two faculty members and two students selected by the dean from disciplines whose methods and techniques of teaching and testing are as similar as possible to those of the discipline of the course in question. If the course is multidisciplinary and the instructor(s) whose grade is being appealed does not belong administratively in the school in which the course was taught, the committee shall have at least one of the faculty members from the instructor's school.

Either party may challenge the committee's membership for cause within a week of being informed of the membership. The dean shall determine if there is sufficient cause to remove the challenged committee member.

The committee shall meet initially to examine the written appeal and the department chair's recommendation. It can require the faculty member(s) to turn over to the committee grade records for that class or section and any tests, papers and examinations by students of that class that

they may possess. The committee may require the student bringing the appeal to turn over all tests, papers or other evaluations that have been returned and all existing evidence that an improper grade was awarded. The committee shall disregard any claim that a test or paper that has been returned to a student was unjustly graded unless that test or paper is produced for the committee's inspection.

After examining the materials, the committee may, by a majority vote, decline to hear an appeal that it judges to be patently without merit. Otherwise, the committee will authorize its chair to arrange a date for a hearing. The chair of the committee shall meet with each party prior to the hearing to explain the rules and procedures of the hearing.

Grade review hearing

Grade appeal hearings will be open, closed or partially open (i.e., a few close associates of each party may attend) by agreement of the appealing student and the faculty member(s) and the chair of the committee of the appealing student. In case of disagreement, the committee shall decide. The chair has the option to declare closed an open or partially open hearing in cases of disruption or in order to ensure necessary confidentiality.

Both parties may have with them an adviser of their choice (who may not be an attorney), with whom they may consult but who will not participate in the questioning of witnesses and presentation of evidence unless the opposing party and chair agree to it. The committee shall ask any member of the VCU community whose testimony it deems relevant to be available at an agreed-upon time to give testimony.

Either party may present additional witnesses as long as they remain within their allotted time and their testimony is directly relevant to the course at issue. Performance in other courses is not relevant. Witnesses other than the appealing student and the faculty member(s) shall be excluded from the hearing except when testifying. A hearing shall begin with the student outlining the reasons for the appeal and all evidence that exists of an improper grade. The faculty member(s) shall then explain the criteria used for the original grade assigned. Each party will have a time period not to exceed two hours in which to present a position.

The committee shall determine in executive session whether the grade was justified according to the course in which the grade was given. If the evidence is that the grade was determined according to the stated objectives, criteria and grading procedures of the course, the committee shall uphold the grade. The committee should also take into account that purposes, methods, requirements and grading criteria differ from course to course and that difference is a legitimate characteristic of a university and its faculty. Further, the grade in some courses may be partly or solely determined by a faculty member's professional judgment, which in itself cannot be overturned without evidence that the judgment was arbitrarily or capriciously rendered. The committee shall consider (a) whether the faculty member(s) articulated the criteria to be used (some criteria may be implicit within the discipline), (b) whether those criteria were actually used to determine the final grade and (c) whether the results of the evaluation were communicated to the student.

No grade may be changed except by a vote of at least three out of four voting members. When the committee has reached a decision, the committee chair shall submit to the dean in writing the decision and the reasons for it. The dean shall communicate in writing the decision of the committee to the appealing student, faculty member(s) and the department chair. If the grade has been changed, the dean also shall notify the registrar.

The evidence, proceedings and the final decision of the committee shall remain confidential. All documents shall be held in a confidential file by the dean for one year. The party from whom a document was obtained may request that it be returned at the end of the year. All documentation not returned shall be destroyed by the dean one year later.

Approved by the University Assembly Dec. 3, 1981.

Effective Feb. 15, 1982.

Revised September 1996. Effective Aug. 15, 1997.

Please note: Any student who has questions about initiating an appeal using the grade review procedure should call the office of the dean of his or her school or college.

VCU Honor System

VCU recognizes that honesty, truth and integrity are values central to its mission as an institution of higher education. Therefore, all students are subject to the **VCU Honor System**. All VCU students are responsible for being familiar with provisions of this document.

Academic dishonesty is the giving, taking or presenting of information or material by students with the intent of unethically or fraudulently aiding themselves or others on any work that is to be considered in the determination of a grade or the completion of academic requirements. Students in doubt regarding any matter related to the standards of academic integrity in a given course or on a given assignment should consult with the faculty member responsible for the course before presenting the work.

Consumer information

The federal Higher Education Act of 1965, as amended, requires that institutions of higher education disclose certain consumer information to current students, prospective students, current employees and/or prospective employees. This consumer information can be found on the Institutional Research and Decision Support (<https://irds.vcu.edu/>) website and includes information about:

- Financial aid
- General information about VCU
- Student Right-to-know Act – completion and graduation rates for general student body and student athletes
- Equity in Athletics Disclosure Act – athletically related expenses and student aid
- Drug and alcohol abuse prevention
- Campus security
- Family Educational Rights and Privacy Act – student rights with respect to educational records

Paper copies of all of the information listed on the consumer information website are available upon request.

Immunization requirements

The Code of Virginia and VCU require that all full-time students submit validated immunization records to University Student Health Services. This requirement must be completed prior to registering for a second full-time semester. Failure to meet immunization requirements will result in a hold placed on the student's second-semester registration. The hold can be removed only upon receipt of the student's documented records.

Acceptable records include the VCU Certificate of Immunization (Monroe Park Campus), the VCU Health Sciences Certificate of Immunization (only students from the College of Health Professions and the schools of Dentistry, Medicine, Nursing and Pharmacy) or an immunization record from the student's doctor's office, high school, local health department, previous university/college or the U.S. military.

Students who cannot provide documented evidence of all required immunizations must see their health care provider, health department or USHS to complete all requirements.

Students are encouraged to use the online system to submit immunization records. Students should complete an electronic Certificate of Immunization and upload supporting documentation through the USHS web portal. See the USHS website (<https://health.students.vcu.edu/immunizations/>) for more information.

Transcripts

A transcript is a copy of the student's academic record. All official transcripts are embossed with the university seal.

Official transcripts of student academic records are issued by the Office of Records and Registration only upon the written request of the student. Due to federal privacy laws, a signature is required to release a transcript; therefore the office cannot fulfill email or telephone requests for transcripts. The request should be made at least one week before the transcript is needed. All transcripts are \$5 each. Currently enrolled students can obtain unofficial copies of transcripts via eServices (<https://my.vcu.edu/>).

An official transcript is issued only after the student has paid all university bills.

Transcript requests signed by the student may be submitted in person at the Records and Registration Student Services Center in Harris Hall, 1015 Floyd Ave., in Room 1004; or requests may be submitted by mail to the Office of Records and Registration, Box 842520, Richmond, VA 23284-2520. Students and recent alumni may request an official transcript and pay by credit card by logging in to eServices and following the links to "Student/Student Records."

Degree requirements

The minimum course requirements, rules of admission to degree candidacy (as appropriate to degree level), language requirements, thesis or dissertation requirements for graduate degrees, comprehensive examinations, transfer of credits and the like are specified for each program on the individual program pages on this website. Additionally, many schools, programs and departments maintain websites and publish special brochures, student manuals and program guides that may be requested from the appropriate dean or program director.

Termination of enrollment

The university reserves the right to terminate the enrollment of any student for unlawful, disorderly or immoral conduct, or for persistent failure to fulfill the purposes for which he or she was matriculated. Any students whose relations are so severed forfeit all rights and claims with respect to the institution.

In addition to dismissal for failure to comply with standards of conduct described in the Rules and Procedures of VCU (<https://policy.vcu.edu/universitywide-policies/policies/rules-and-procedures.html>) and the VCU

Honor System (<https://conduct.students.vcu.edu/vcu-honor-system/>), a student may be dismissed from the academic unit in which he or she is enrolled for failure to meet academic requirements prescribed by his or her academic unit or failure to exhibit the attitudes and skills deemed necessary to function within the chosen professional practice. Therefore any action by a student considered to be unprofessional conduct according to the code of ethics and the laws and regulations governing the student's chosen profession shall constitute cause for disciplinary action.

Unprofessional conduct includes, but is not limited to:

1. Fraud or deceit in gaining admission to the university, i.e., false or obviously misleading representations on the admissions application
2. An act that violates the established standards regarding conduct of one person toward society, as stated in the VCU Code of Conduct (<https://acs.vcu.edu/integrity-and-compliance-office/vcu-code-of-conduct/>)
3. Conviction of a felony involving moral turpitude

Course information

Credit hour

A credit hour is defined as a reasonable approximation of one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately 15 weeks, or the equivalent amount of work over a different amount of time. Credit is based on at least an equivalent amount of work for other academic activities including laboratory work, internships, practica, studio work and other academic work leading to the award of credit hours and is established by individual programs. This definition represents the minimum standard. Student time commitment per credit hour may be higher in individual programs.

Course numbering system

All schools and programs within VCU use the following course numbering system. All course numbers consist of three digits (XXX). The first digit relates to the course level as follows:

0XX – Noncredit courses

Courses with these numbers are offered for students to make up deficiencies in previous training or to improve certain basic skills.

1XX and 2XX – Undergraduate, lower-level

These courses are offered primarily for undergraduate students and may not be used for graduate credit, although graduate students may be required to register for courses at this level to gain a necessary foundation for other course work.

3XX and 4XX – Undergraduate, upper-level

These courses are offered for advanced undergraduates and usually constitute the major portion of specific program work leading to the baccalaureate degree. On occasion, students will be advised by their graduate advisers to enroll in prerequisite 400-level courses. Graduate programs can require that 300- or 400-level courses be taken, but credit in these courses cannot count toward the graduate degree or in the graduate GPA.

5XX – Introductory graduate courses

Graduate students enroll for credit in these courses through the normal graduate advising system. Departments may limit the number of 500-level courses applicable to a graduate degree program. Advanced undergraduates may enroll in these courses for credit with consent of the offering department. Credit is applicable toward only one degree unless a student is admitted to a course of study that allows a defined number of shared courses.

5XX – Professional graduate courses

These first-year, first-professional (medicine, dentistry and pharmacy) courses are normally open to students enrolled in the M.D., D.D.S. and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the University Graduate Council for graduate credit.

6XX, 7XX and 8XX – Graduate courses

Graduate students enroll for credit in these courses through the normal graduate advising system. Credit is applicable toward only one degree unless a student is admitted to a course of study that allows a defined number of shared courses.

6XX and 7XX – Professional graduate courses

6XX: These second-year first-professional courses are normally open only to students enrolled in the M.D., D.D.S. and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the University Graduate Council for graduate credit.

7XX: These third- and fourth-year first-professional courses are normally open only to students enrolled in the M.D., D.D.S. and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the University Graduate Council for graduate credit.

Grading and marking system

VCU course work is measured both in terms of quantity (semester hours of credit) and quality (grades). Grades are assigned according to a letter system. Each letter is assigned a grade-point value. The scale used is known as a four-point grading system since 4.0 is the highest grade point assigned. The number of grade points earned is computed by multiplying the grade-point value for the letter grade times the number of semester credits for the course. For example, a student who receives an A (four grade points) in a three-credit course earns 12 grade points.

Grade letter	Meaning	Grade-point values per semester credit
A		4.0
B		3.0
C		2.0
D		1.0
F		0.0
FI	Incomplete changed to fail	0.0
AP	Advanced Placement	(-)
AU	Audit	(-)
CO	Continued	(-)
CR	Credit	(-)
H	Honors	(-)
HP	High Pass	(-)

I	Incomplete	(-)
IB	International Baccalaureate	(-)
IM	Incomplete Military	(-)
M	Marginal	(-)
NC	Administrative grade with no credit	(-)
NR/NG	Administrative grade assigned when no grade is submitted by the instructor	(-)
P	Pass	(-)
PP	Pass (conversion from grade of A-C)	(-)
PR	Progress	(-)
PS	Pass (conversion from grade of D)	(-)
S	Satisfactory	(-)
TR	Transfer Credit	(-)
U	Unsatisfactory	(-)
W	Withdrawn	(-)
WM	Withdrawn Military	(-)
DN	D grade excluded from GPA	(-)
FN	F grade excluded from GPA	(-)

Grades designated by a blank, (-), in the grade-point column are not considered in the computation of grade points earned or GPA.

Further explanation of grades/marks above

Grade of pass (P, PP or PS)

This grade is awarded for certain courses to denote satisfactory completion of requirements. The grade of PP results from the conversion of a letter grade of A-C; the grade of PS results from the conversion of a letter grade of D. The grade of P, PP or PS is not included in the calculation of the GPA. (See additional information on PP and PS grades in the pass/fail grade policy for undergraduate students below.)

Grade of progress (PR)

The mark of PR may be assigned only in courses approved for such grading. Unlike the mark of I, PR will not automatically be changed to a failing grade at the end of the succeeding semester. The grade of PR is not included in the calculation of the GPA.

Grades of satisfactory (S) or unsatisfactory (U)

Receipt of the grade of S is formal notification to the student of satisfactory progress. Receipt of the grade of U is formal notification of unsatisfactory progress. A grade of U is a permanent grade and associated credits do not count toward a degree. Future satisfactory performance following a grade of U is reflected in the assignment of the grade of S in subsequent semesters. A grade of S or U is not included in the calculation of the GPA.

Mark of audit (AU)

Class size permitting, students may register for courses on an audit basis. Auditing a course means students enroll in a course but do not receive academic credit upon completion of the course. Students who register on an audit basis are subject to attendance regulations of that class and, unless otherwise specified, at the discretion of the instructor, are subject to the same course requirements as other students in the class.

Students who register on an audit basis may be administratively withdrawn by instructors for a violation of class requirements for audit students, before or after the normal withdrawal deadline as posted

on the VCU Academic Calendar (<http://academiccalendars.vcu.edu/>). Audit students are charged the regular rate of tuition and fees. An audit course is counted as part of the student's semester load in terms of classification as a full-time student. Courses taken for audit, however, do not satisfy minimum enrollment requirements for students receiving graduate teaching or research assistantships, graduate fellowships or university graduate scholarships.

Students may register for audit only during add/drop and late registration periods as a new registration and not as a change from credit to audit. Changes in registration status from audit to credit or from credit to audit will not be approved after the last day of add/drop registration.

Courses assigned the AU mark will not be computed into the GPA and do not result in earned credit hours.

Mark of continued (CO)

The mark of CO may be assigned as an interim mark for those courses that run over more than one grade reporting period. The CO mark indicates the course is not expected to be completed in a single semester and that the student must re-register for the course in the following semester. Upon departmental notification, CO marks for courses not re-registered for in the following semester are converted to F grades. Upon completion of the course, a final grade is assigned for that semester and the previous CO mark(s) remain. This mark may be assigned only in courses approved for such grading. Courses assigned the CO mark will not be computed into the GPA and do not result in earned credit hours.

Mark of credit (CR)

Courses assigned the CR mark will not be computed into the GPA.

Mark of honors (H)

Courses assigned the H mark will not be computed into the GPA.

Mark of high pass (HP)

Courses assigned the HP grade will not be computed into the GPA.

Mark of incomplete (I)

When circumstances beyond a student's control prevent the student from meeting course requirements by the end of the semester, the student may request the instructor to assign the mark of I for that semester. The awarding of a mark of I requires an agreement between instructor and student as to when and how the course will be completed. Once the agreement is reached, the instructor fills out an incomplete grade assignment form bearing the student's signature; the form is submitted instead of a final course grade. A grade cannot be changed to I after the deadline for grade submissions.

The maximum time limit for submission of all course work necessary for removal of an incomplete is the end of the last day of classes of the next semester following the semester in which the incomplete was incurred (i.e., an incomplete awarded in the fall semester must be converted by the last day of classes in the spring semester, and an incomplete awarded in the spring or summer session must be converted by the last day of classes in the fall semester). At that time, an un-removed grade of incomplete is changed automatically to a failing grade. Individual departments and schools may have more stringent time limits. An extension of the time limit is possible, but must be approved, prior to the expiration date stated above, by the instructor and the dean of the school through which the course is offered. For undergraduate and professional students, written approval indicating the new time limit must be filed with the dean of the school through which the course is offered. For graduate

students, written approval indicating the new time limit must be filed with the dean of the Graduate School.

Courses assigned the I mark will not be computed into the GPA.

Mark of incomplete military (IM)

See the "Military services crisis tuition relief, refund and reinstatement guidelines" in the Tuition, fees and expenses (p. 47) section of this bulletin. Courses assigned the IM mark will not be computed into the GPA.

Mark of marginal (M)

Courses assigned the M mark will not be computed into the GPA.

Mark of withdrawn (W)

The mark of W indicates the student has officially withdrawn from the course or has been withdrawn for a violation of the course attendance policy or nonattendance. A student who has officially withdrawn from a course or who has been administratively withdrawn for nonattendance may not attend subsequent meetings of the course.

Students should refer to any school- or course-specific policies related to withdrawal dates. The last day to withdraw for the fall and spring semesters is as published in the VCU academic calendar (<https://academiccalendars.vcu.edu/>), and is typically the end of the 10th week of classes. Summer session students should check the Summer Studies Calendar (<http://www.summer.vcu.edu/calendar/>).

Courses assigned the W will not be computed into the GPA. For further information see the Withdrawal from the university (p. 21) entry in this section of this bulletin.

Mark of withdrawn military (WM)

Courses assigned the WM mark will not be computed into the GPA. See the "Military services crisis tuition relief, refund and reinstatement guidelines" in the Tuition, fees and expenses (p. 47) section of this bulletin.

Pass/fail grade policy for undergraduate students

Undergraduate students may request that a course they are enrolled in be taken under the pass/fail grade option. Undergraduate students can apply no more than 12 credit hours of PP/PS grades taken under the pass/fail grade option over the entirety of their degree program. These restrictions do not apply to courses that are only offered as P/F.

Students may not use the pass/fail grade option:

1. To satisfy a prerequisite that requires a minimum grade of B
2. For courses that may count toward the requirements of the student's major

Under the pass/fail grade option, students would have grades reported as either:

PP. Grade of pass (equivalent to letter grade of A, B or C) is awarded for certain courses to denote satisfactory completion of requirements equivalent to the letter grades of A-C. The grade of PP is not included in the calculation of GPA. The grade of PP will satisfy course requirements of a minimum grade of C to advance to another course.

PS: Grade of pass (equivalent to letter grade of D) is awarded for certain courses to denote satisfactory completion of requirements equivalent to the letter grade of D. The grade of PS is not included in the calculation of GPA. The grade of PS will not satisfy course requirements of a minimum grade of C to advance to another course and students may have to retake the course if they change their major and a minimum letter grade of C was required.

F: Grade of fail (equivalent to letter grade of F) is considered not passing and is included in the calculation of the GPA.

Students should consult with an adviser to understand the implications of their decision.

Instructors of record will not be aware of the student choice. Each faculty member will evaluate student performance in the course consistent with expectations outlined in the course syllabus. If a student has opted for the pass/fail grade option, the assigned grade will be converted to the appropriate pass/fail designation pursuant to the letter grade earned. For example, the instructor would enter a letter grade (A, B, C, D, F) as usual. If the student has chosen the Pass/Fail grade option, then grades A, B or C become a PP; a grade of D becomes a PS; and a grade of F becomes a F.

Students may select the pass/fail grade option for eligible courses no later than the last day to withdraw from a course. All decisions by students are final and irrevocable.

Students have a right to appeal course grades they consider to have been arbitrarily or capriciously assigned or assigned without regard for the criteria, requirements and procedures of the course stated in the syllabus or guidelines for assignments. Students who want to appeal the course grade should follow the guidelines provided under the Grade Review Procedures (p. 15).

Students may not appeal their decision to choose the pass/fail grade option. If students desire to appeal any other matter related to pass/fail outside the grade assigned, students should follow the guidelines provided under Academic Regulations Appeals Committee (p. 22).

Grade-point average

The GPA is computed by dividing the number of grade points earned at VCU by the number of credit hours attempted at VCU. The grades of accepted transfer courses are not included in the computation of the VCU GPA. However, transfer grades are included in the computation of laudatory graduation honors for undergraduate students.

VCU has three program levels: undergraduate, graduate and professional. Each program level has a cumulative GPA. For students who enroll in multiple programs at the same degree level, the GPA for the multiple programs will be merged. For example, a student who graduates from an undergraduate program at VCU and pursues a second undergraduate program at VCU will have one continuous GPA.

Reading the transcript

The E notation, when following a letter grade, means that the course has been repeated and the grade and earned hours are excluded from the GPA.

The A notation, when following a letter grade, means that course is duplicate credit and the grade and hours are included in the GPA, but the hours have been removed from earned hours total.

The I notation, when following a letter grade, means that the grade and earned hours are included in the GPA.

Letter grades preceded by an X are not computed in the GPA.

Grades of D or F may be assigned by the Honor Council and the grade is computed in the GPA. However, a grade of W may be assigned by the Honor Council and is not computed in the GPA. In both cases a notation will be made on the academic transcript detailing the Honor Council assignment.

Change of grade

A final grade may be corrected by the faculty member with proper submission of the change of grade form (for undergraduates) or special action form (for graduate students) to the chair of the department in which the course was taught. Once the chair approves the request, it goes to the school's dean for review, and upon approval, then goes to the Office of Records and Registration or Graduate School, as appropriate. A change of grade that affects the student's academic eligibility to enroll must be made prior to the end of the add/drop period in the semester or summer session in which the student plans to continue attendance. Any change of grade must be completed prior to graduation.

Evaluation and final grade reports

University policy requires faculty to provide students with feedback about their academic performance before the semester or class withdrawal date. Although such feedback does not always take the form of a letter grade, grades do provide a clear indication of class progress. Students are encouraged to discuss their progress in courses with their instructors, especially before the withdrawal deadline.

Students who do not attend class are responsible for dropping or withdrawing from class during the established dates. Exceptions to this policy are made only in rare instances. Requests for an exception should begin with a discussion with the academic adviser and must be filed with the appropriate body within three years of the semester of enrollment..

Grades and unofficial academic histories are available online through **eServices**; official transcripts may be obtained for a fee from the **Office of Records and Registration**.

Additional information about appealing grades can be found on the Grade review procedures (p. 15) page.

Posthumous degrees

Recipients of posthumous degrees should meet the following conditions:

- The student was in good academic standing at the time of his or her death.
- The degree must be awarded within three years of the last day of enrollment.
- There were no disciplinary actions pending against the student.
- The death was not a result of illegal behavior on the part of the student.
- The student earned at least 30 credits at VCU and was within the last 30 credits of graduating (if an undergraduate student).

Graduate and professional programs will determine equivalent progress of students toward their graduate or professional degrees.

A notation that the degree was awarded posthumously will be made in the commencement program and on the transcript, but not on the diploma.

University right to revocation

The university reserves the right to revoke any degree, certificate or other university recognition for cause. In addition, any time following the award of a degree, certificate or other university recognition, the university reserves the right to take appropriate action, including, but not limited to, the revocation of such degree, certificate or other university recognition, on the basis of academic misconduct discovered subsequent to, but which occurred prior to, the awarding of the degree, certificate or other university recognition. More specifically, when an action that constitutes a violation of the VCU Honor System leads to a finding that invalidates a major piece of work required for a degree, certificate or other university recognition so that the validity of the degree, certificate or other university recognition is jeopardized, the student or former student will be subject to a sanction that may include (a) rejection of a thesis, dissertation or other work, (b) revocation of a certification or other university recognition or (c) revocation of a degree.

Leave of absence

Note: This leave of absence regulation applies only to graduate and first-professional students; it does not apply to undergraduate students.

Graduate and first-professional students may request a leave of absence from a program through written appeal to their program director. The program director will forward the request to the appropriate school dean/dean designee who, following departmental governance procedures, will forward their recommendations and any supporting documentation for final approval as necessary.

Students who are out of compliance with continuous enrollment policies (see Graduate registration policies (<http://bulletin.vcu.edu/academic-regs/grad/registration-policies/>)) and who have not been granted approved leaves of absence by the appropriate dean must reapply for admission to VCU and to their degree programs.

Graduate students with approved leaves of absence are exempted from continuous enrollment requirements for the LOA period. Students should note that while leaves of absence temporarily suspend continuous enrollment requirements, they do not extend time limits for completion of degrees. (See policy on Exceptions (<http://bulletin.vcu.edu/academic-regs/grad/exceptions/>)).

Leaves of absence must be requested and approved before or during the first term of leave. Requests for retroactive leaves of absence will not be approved.

The leave of absence prevents registration for the approved leave of absence period. If the student wishes to return to academic study before the end of the approved leave of absence period, they should notify the appropriate school or college to request that the leave of absence be shortened and the registration hold removed.

Because curricular and course content changes may occur and a student's progress toward a degree may be adversely affected because of an extended absence, specific limits may be imposed by individual schools and colleges with respect to the length of time allowed for absences. Extended leaves of absence may also impact financial aid; students should consult the Office of Financial Aid to understand the potential impact of a leave of absence. If there is a delay in return beyond

the allotted time period without written consent of the dean of the school or college, the student may be required to reapply for admission.

Students on leave are eligible for reinstatement of their enrollment through the end of their approved leave period, and many students who take a leave will have no requirements attached to their reinstatement. The dean of the student's school or college may establish specific requirements for reinstatement if the circumstances of the student's departure warrant it. The goal of such conditions is to prepare the student for a successful return to the university; for example, a student may be asked to complete preapproved course work at an outside institution in order to demonstrate readiness to return to rigorous academic work or to participate in a reinstatement consultation with Student Accessibility and Educational Opportunity, Division for Academic Success, University Student Health Services, or University Counseling Services, to facilitate a successful return. If the leave is health-related, any conditions or requirements for reinstatement will be based on an individualized assessment of each student, including consideration of current medical knowledge and/or the best available objective evidence of the student's ability to function academically at the university with or without accommodations. Careful consideration will be given to the opinions and recommendations of a qualified health care professional who treated the student, if available.

Withdrawal from the university

Students may withdraw from any or all courses before the relevant deadlines published in the **VCU Academic Calendars**. Failure to complete this process may result in the assignment of failing grades in any course in which the student is enrolled and does not complete all course requirements.

A mark of W (withdrawn) will be recorded on the permanent student academic record for all courses from which students withdraw. Charges are assessed and adjusted according to the university refund policy, which is published in the tuition and fees section of each level-specific bulletin. Students should consult with the Office of Financial Aid to understand how a withdrawal may impact future financial aid in relation to satisfactory progress.

Whenever possible, students should consult their academic or program adviser prior to any withdrawals. Certain academic programs have specific continuance standards; students in those programs should consult their program adviser to understand how withdrawal may affect continuance in the program.

Additional information about cancellation of registration may be found in the level-specific registration policies sections of this Bulletin. Leave of absence (p. 21) (for graduate and professional students) and medical leave of absence (p. 29) (for undergraduates) are also addressed elsewhere in this Bulletin.

Effective bulletin

The bulletin for the academic year a student enters or re-enters a degree program identifies the curriculum degree requirements for that student. Students in continuous enrollment may fulfill the curriculum degree requirements of the bulletin for the year they entered VCU or choose to be subject to the curriculum degree requirements articulated in a subsequent bulletin. Subsequent bulletins can be chosen throughout a student's academic career. In either case, students must fulfill all curriculum degree requirements listed in the bulletin they choose.

A student's effective bulletin will remain in effect until the degree is awarded. Change in academic program (major, concentration, minor) or adding an academic program will not result in a change in effective bulletin unless the student chooses to be subject to the curriculum degree requirements articulated in a subsequent bulletin.

Students readmitted to the university will fall under the bulletin in effect at the time of readmission. At the discretion of the school dean, department chair or program head, degree requirements may be waived and/or previously taken courses may be substituted for requirements in effect at the time of readmission.

Note: This policy may not apply to first-professional students.

Degree Works

Degree Works is a web-based degree audit tool that helps students and advisers monitor progress toward degree completion. It produces a report that outlines the components and requirements for a student's degree program and tracks the student's progress in completing those requirements.

The report is not intended to replace regular contact with academic/faculty advisers, but provides accurate information to assist students and advisers in making appropriate academic choices based on information in Banner, the university's student information system.

All degree requirements are based on the official curriculum as approved by the university-level curriculum committees and as published in the effective VCU Bulletin of record. While Degree Works is a self-service tool for students and advisers, it is the official means used to confirm that students have completed requirements for graduation.

Note: This policy may not apply to first-professional students.

Undergraduate-only regulations

Regulations presented in this section apply in particular to undergraduate students. Use the navigation to the left to see additional regulations that apply to all students or specifically to graduate students.

Students are responsible for knowing and fulfilling all general and specific degree requirements as described in this section.

It is the responsibility of all undergraduate students to be familiar with the Undergraduate Bulletin of record (the bulletin in effect at the time of official admission), as well as the academic regulations in individual school and department publications and on program websites; however, in all cases, the academic regulations and general degree requirements, as published on this Undergraduate Bulletin website, take precedence over individual program policies and guidelines.

Academic Regulations Appeals Committee

The Academic Regulations Appeals Committee considers appeals for exceptions to undergraduate program academic regulations listed in this bulletin. The committee is a standing committee of the Office of Academic Affairs and reports to the Senior Vice Provost for Academic Affairs.

Undergraduate students who wish to petition the university for a waiver of the academic regulations in this bulletin may do so through the Academic Regulations Appeals Committee. Students who have been accepted to the graduate portion of a five-year bachelor's/master's

program may also need to make an appeal through the Graduate School. A petition for waiver must be submitted prior to conferral of the undergraduate degree and within three years of the last day of classes for the semester in which the waiver would apply.

To begin the appeal process, students should contact the Academic Regulations Appeals Committee representative in the dean's office of their school or college; nondegree-seeking students should contact University Academic Advising at (804) 827-8648. The student then works with the representative to prepare the petition following guidelines established by each school or college. The first step is for the student to prepare a letter that details the extenuating circumstances supporting the student's belief that the university should waive its regulations and grant the request. All circumstances cited in the student's letter must be documented, and the student is responsible for gathering all necessary documentation. Examples of documentation include medical records, police reports, death certificates and employer reports. Things that may not be used as documentation include letters from parents, friends or relatives. Any petition that does not have the required documentation will be tabled and can remain tabled for at most two additional meetings. If the requested documentation has still not been provided by the student after this period, the committee will vote based on the information that it has.

After the Academic Regulations Appeals Committee representative receives the student's letter and all necessary documentation, he or she will prepare a petition cover sheet and, if appropriate, gather pertinent information from faculty. When the petition is complete, it will be submitted to the committee and discussed at one of its meetings. Requests are granted or denied by a majority vote of the committee. Decisions are effective immediately, and students are notified by their representative. All committee procedures are confidential and ensure the right to privacy of the student.

Since a request to waive a regulation is itself an appeal, committee decisions are final, and there is no further appeal within the university. Once a petition is voted upon, if denied, it cannot be brought back for future vote even if new documentation is found. However, a student on academic suspension can bring a request for a waiver of the continuance policy back to the committee once a full semester has passed since the last petition. In exceptional circumstances any member of the Academic Regulations Appeals Committee and/or academic dean may refer a case to the provost who has the right, but not the obligation, to consider remanding it back to the committee for further review.

Certain exceptions may affect current and future financial aid. Students should consult with a financial aid staff member before submitting an appeal. Students with a Student Accounting hold on the first day of an academic semester (fall, spring, summer) due to failure to pay a bill from the previous semester are unable to request a retroactive add of a course during that semester. Students who did not have a Student Accounting hold on the first day of a semester are eligible to request retroactive adds to courses, but they must have all subsequent holds cleared before the request can be considered.

Undergraduate classification

Academic programs

Full-time and part-time degree-seeking students, but not nondegree-seeking students, are classified by credit hours earned as follows:

Year	Credits
Freshmen	one to 23 credit hours
Sophomores	24 to 53 credit hours
Juniors	54 to 84 credit hours
Seniors	85 credit hours and more

Health science programs

Classification is determined by curriculum requirements for individual programs.

Degree definitions

Major

A major is a student's principal field of study. Majors are in specific disciplines or are interdisciplinary groupings of courses that are designed to make a coherent whole. The department or program administering the major specifies required and optional courses. Undergraduate students must declare a major no later than the semester in which they are enrolled in their 60th credit. Some majors require course sequences that necessitate earlier selection of the major in order to earn a baccalaureate degree within four years of full-time study. Therefore a registration hold will be placed on any undeclared undergraduate student enrolled in their 60th credit. The hold will not be removed until the student meets with an adviser for major selection.

The major becomes official only after the Office of Records and Registration has received approval of the change by the appropriate school dean or designee. The major will appear on the student's permanent record at the time of graduation.

The following minimum requirements are needed for completion of a major:

- A minimum of 30 credits in the major area, at least half of which are at the 300 or 400 level
- Any special requirements stipulated by the major

A minimum major GPA of 2.0 (grade of C) is required for graduation. The major area GPA will be calculated from all attempts in courses that are designated as required or optional in the student's major area, regardless of assigned grade. Exceptions to this calculation will be grades omitted due to a historical academic repeat or the grade exclusion policy. Students should consult with their department or program to determine if a higher GPA is specified for graduation. Only course credits taken at VCU are computed in the major GPA.

Concentration

A concentration is a set of courses that provides structured study in a topic within the major. Concentrations require a minimum of nine credits in addition to the specified core requirements in the major. The department or program administering the concentration specifies required and optional courses. The concentration may be used to fulfill career needs or to facilitate in-depth investigation in a topic related to an area of interest to the student. The concentration becomes official only after the Office of Records and Registration has received the change of major/concentration approval by the appropriate school dean or designee. A concentration will appear on the student's permanent record at the time of graduation. All courses in the concentration must be completed before graduation with a bachelor's degree.

Double major

A double major is the concurrent fulfillment of the requirements of two majors. To earn a degree with two majors, the student must complete the courses required in each major, any prerequisite courses required for both majors and the general education requirements, including the University Core curriculum, of the primary major. Individual degree programs may set limits on the number of credits that can be shared between two majors.

One diploma is awarded displaying the primary major and both majors appear on the student's academic record. The primary major appears on the transcript as the degree awarded and the second major will appear as an accompanying note.

The double major becomes official only after the Office of Records and Registration has received the change of major/concentration approval from the appropriate school dean or designee.

Minor

A minor is a set of courses analogous to and named for an existing major or discipline, or an interdisciplinary grouping of courses not represented by a major. Although a minor is not required for completion of most degree programs, a student may elect an approved minor. Minors require a minimum of 18 credits. Unless approved by the University Undergraduate Curriculum Committee, at least nine of the credits in a minor must be in 300-level or higher courses, unless a greater number is specified. Students must achieve a minimum GPA of 2.0 in designated course work in order to earn the minor. The department or program administering the minor specifies required and optional courses. The minor may be used to fulfill career needs or to facilitate in-depth investigation in a discipline of secondary interest to the student.

The minor becomes official only after the Office of Records and Registration has received approval from the appropriate school dean or designee. A student cannot minor in a discipline identical to the major. A minor will appear on the student's permanent record at the time of graduation if the student has completed all requirements for the minor and approval has been granted by the appropriate school dean or designee.

Undergraduate dual degrees

Dual degree programs allow students to pursue concurrent study in two separate undergraduate degree programs and receive two separate program completion credentials (diplomas). Dual degree programs may combine two VCU programs or combine a VCU degree program with a degree offered at another regionally accredited domestic or international institution.

To earn concurrent dual degrees by combining two VCU undergraduate programs, a student must fulfill all the requirements for both majors, the general education requirements of the primary degree program, including the University Core curriculum, and complete an additional 30 credit hours above the minimum degree hour requirement of the primary degree. A diploma is awarded for each degree, and both degrees will appear on the student's academic record. Individual programs may set limits on the number of credits that can be shared between degree programs.

Second baccalaureate degree

A student who already has earned a baccalaureate degree from VCU or another institution and wishes to earn a second baccalaureate degree at

VCU must complete the admissions process outlined in the Admission to the university (p. 32) chapter of this bulletin.

Students who have earned a baccalaureate degree at another regionally accredited institution but who wish to acquire a second baccalaureate degree from VCU will be considered to have fulfilled the University Core Curriculum as well as the university general education requirements for the second degree. Such students will be expected to meet all college, school and departmental requirements.

Students seeking a second baccalaureate degree must earn, at VCU and after acceptance into the second baccalaureate degree program, a minimum of 30 additional credits applicable to the second degree program. Each additional baccalaureate degree pursued requires an additional 30 applicable credits. Prior to undertaking the second degree, students must have their accumulated credits evaluated and approved by the Transfer Center.

In addition, students must meet the degree requirements for all undergraduate students (p. 27) as found in this section of the bulletin.

Accelerated degree programs

Accelerated degree programs allow completion of a program of study in fewer than the usual number of years, most often by attending summer sessions and carrying extra courses during regular academic terms following a prescribed plan of study.

Continuance in undergraduate programs

Monroe Park Campus programs

Definition of good standing

A student who is enrolled at VCU is in “good standing” until such time the student is placed on academic warning, probation or suspension. Students should consult their program of study regarding specific academic standards constituting good standing in the program.

Academic warning

A student is placed on academic warning when the student’s cumulative GPA falls below 2.0 (grade C) at the conclusion of any semester of attendance — fall, spring or summer. Notification of warning appears on the student’s academic record. A degree-seeking student on academic warning may not enroll in more than 14 credits per semester of attendance except under unusual circumstances and with the permission of the dean or designee of the school or college in which the student is enrolled. A student remains on academic warning for one semester of attendance, at the end of which time the student must obtain a minimum cumulative GPA of 2.0. Failure to achieve this GPA results in academic probation.

Academic probation

A student is placed on academic probation when the student’s cumulative GPA falls below 2.0 for two successive semesters of attendance, including summer sessions. Notification of probation appears on the student’s academic record.

A degree-seeking student on academic probation may not enroll in more than 13 credits per semester of attendance. Students on academic probation are expected to improve their cumulative GPA by achieving a minimum semester GPA of 2.0 during each semester of attendance. A student who achieves a minimum cumulative GPA of 2.0 is removed

from academic probation. Failure to achieve a 2.0 semester GPA while on probation results in academic suspension.

Academic suspension

A student is placed on academic suspension if the student earns a semester GPA below 2.0 while on academic probation.

Notification of suspension appears on the student’s academic record. The student also receives a letter from the Office of Records and Registration stating the conditions of the suspension. Academic suspension indicates the student has a record of continued unsatisfactory progress.

A student on a first academic suspension may not enroll at the university for two consecutive semesters, including the summer session. Course work taken at another institution while the student is under academic suspension from VCU is considered part of the criteria for readmission, but the course work is not used to increase the VCU cumulative GPA. If the student is readmitted, the course work will be evaluated according to regular procedures.

A student may apply for readmission to VCU for the semester following completion of the suspension period. A student readmitted after suspension enrolls under the academic probation status and is subject to the provisions of that status. If a student readmitted after suspension fails to obtain a semester GPA of 2.0 in any semester before achieving a minimum cumulative GPA of 2.0, the student is placed on a five-year suspension. The student may be considered for readmission after a minimum five-year separation from VCU.

Although a student may be approved for readmission to VCU, the student is not automatically eligible to receive federal or state financial aid. See the Financial aid (p. 53) section of this bulletin for information about Satisfactory Academic Progress standards and suspension of aid eligibility. Detailed information about the SAP appeals process (<https://finaid.vcu.edu/manage/appeals/>) can be found on the VCU Office of Financial Aid website.

For Readmission guidelines (p. 46), see the Admission to the university section of this bulletin.

Note that the rules and procedures for suspensions assigned due to violations of the honors system, the student conduct policy or other reasons may be different from those described here for academic suspensions.

MCV Campus programs

Warning, probation and suspension are defined by the program of study. Consult the program adviser for further details. Undergraduate students dismissed from an MCV Campus program will be placed in the undeclared major. Students who wish to pursue a different major should follow the process outlined under the Change of academic program (p. 25) section in this bulletin.

The individual health science schools recognize and support the statements set forth by the licensing boards of the respective health professions as they relate to examination, licensure and the practice of each profession. When applicable, these standards may be used in determining a student’s eligibility for continuance in or readmission to the university.

Grade exclusion policy

This policy is applicable to former students enrolled in any undergraduate program at the university who:

1. Have not enrolled at VCU for five years or more
2. Are now entering an undergraduate program
3. Earn a minimum 2.0 GPA on the first 12 semester hours completed upon return

Under this policy, eligible students may request that D and F grades previously earned at VCU be excluded from their total credits earned and GPA computation for the purpose of meeting scholastic continuance and graduation requirements.

All earned grades, including those excluded D and F grades, remain on the student's academic record. Excluded grades must be approved by the appropriate academic dean or designee.

Initiating the grade exclusion option will not result in a change in previously earned academic statuses (warning, probation, suspension). Grades of DN and FN indicate that the letter grade is not computed in the GPA.

The grade exclusion policy may be used only once during a student's enrollment at VCU and cannot be revoked by the student after approval is granted. A student who chooses to use this policy must do so before the awarding of his or her undergraduate degree.

Repeated courses

Because some programs do not allow students to repeat courses, any student planning to do so must first consult with his or her adviser, department chair or program head.

The semester credits attempted and the grade points earned for all attempts are included in computing the cumulative GPA. No matter how often a course is repeated, it may be counted only once as credits presented toward graduation unless otherwise specified in the course description.

If a student repeats a course in which a D or F was earned on the first attempt, the student can file the historical repeat course option form at any time during a semester prior to the awarding of the undergraduate degree. This form must be filed before the last week of classes in any semester so the cumulative GPA can be adjusted at the end of that semester. It is available online at Records and Registration Forms (<http://rar.vcu.edu/forms/>).

In the case of courses that are no longer offered at VCU, students may take the established equivalent course at VCU and the historical repeat described in the previous paragraph applies. Verification of the equivalency should be confirmed with the program offering the course prior to registering for the second course.

The grade is not excluded until the request is made. If, however, more than one D or F grade is received in the same course or its equivalent course, only one of these grades will be excluded from the computation of the cumulative GPA.

Grades for all attempted courses remain on the student's permanent record. Students may not repeat courses for which they have previously

received transfer credit. A repeated course may be counted only once toward credits necessary for graduation. Before repeating a course, the student should consult with the adviser, department chair or program head.

Initiating the repeated course option by using the historical repeat course option form will not result in a change in previously earned academic statuses (warning, probation, suspension). Students who choose to repeat a course must do so before the awarding of their undergraduate degrees from VCU, or from any other college to which VCU course work is transferred. The student's GPA at graduation will not be affected by repeating a course at any time after graduation.

Students who are eligible to file a historical repeat on a course that would change their academic standing have until the end of the add/drop period the following semester to file an ARAC petition with their school/college ARAC representative to request that the academic status be changed. Once the add/drop period for the following semester has passed the student can still submit the historical repeat and have the grade point average changed, but the academic status will not be changed.¹ For courses taken in the spring semester, the following semester is the summer session and the petition must be filed within one week (seven days) of when the first summer session starts.

¹If a student has filed a historical repeat that would change their academic standing to "good standing" (minimum grade point average of 2.0), is returning to VCU after at least one semester as a non-active student, and is not enrolled in any VCU courses, they may file an ARAC petition to change their final academic standing to good standing.

Change of academic program

Before initiating a change of major, concentration or minor, students should contact the office administering the program of study to carefully review the requirements and prerequisites. In certain programs – including those in the schools of the Arts, Business, Media and Culture, and in the Bachelor of Interdisciplinary Studies program – a candidate must fulfill additional requirements before authorization to enter the program is granted. Credits previously earned at VCU or at another university may or may not be applicable to the new academic program.

The academic program change becomes official after the Office of Records and Registration has received authorization from the appropriate school dean or designee. Changes in academic program may occur for the current semester only through the add/drop period. Changes processed after the add/drop period are effective for the following fall or spring semester, and changes processed during the summer sessions are effective for the following fall semester.

Students currently enrolled in an MCV Campus program who wish to change to a curriculum on the Monroe Park Campus should follow the process mentioned above. Such students are subject to the continuance policy of the Monroe Park Campus after the academic program change has occurred. Students currently enrolled in an MCV Campus undergraduate program who wish to change to another MCV Campus undergraduate curriculum must go through the admission process outlined in the Admission to the university (p. 46) chapter of this bulletin.

Students enrolled in a graduate or professional program of study at VCU who wish to return to a previous undergraduate program in which a degree has not been awarded may do so through a change in academic program as outlined above. Such students should consult the graduate

or professional bulletins regarding the process for withdrawing from their current graduate or professional program of study. If a degree already has been awarded in an undergraduate program of study, graduate or professional students must go through the admission process to re-enter an undergraduate program as outlined in the Admission to the university (p. 46) chapter of this bulletin.

Nondegree-seeking students intending to enter a degree-seeking status must go through the admission process outlined in the Admission to the university (p. 32) chapter of this bulletin.

Undergraduate registration

Continuous enrollment

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for the semester. Students who do not attend VCU for three or more successive semesters excluding summer sessions must submit an application for readmission to Undergraduate Admissions. See the undergraduate readmission/continuous enrollment chart (p. 46) for details on readmission and continuous enrollment. This application must be completed and turned in before the application submission date for the semester in which the student plans to return. For health science programs, breaks in enrollment must be approved by the department.

Student load

Student load is the total number of credits for which a student is enrolled in any one semester. The semester credit is the quantitative unit by which courses are measured and is defined by the number of credit hours as found under general course information (p. 17).

Full-time and part-time students

A student enrolled in 12 credits or more during any fall or spring semester is classified as full time. A student enrolled in 11 credits or less during any semester is classified as part time. Both full-time and part-time students may seek degrees at VCU. However, some curricula may require full-time status. For more information, see the enrollment categories (p. 28) section of this bulletin.

Academic overload

A degree-seeking undergraduate student may take no more than 19 credits per semester without special permission. This maximum load excludes holiday intersession courses. More than 19 credits per semester constitute an academic overload. Health science curricula requiring more than 19 credits per semester are exempt from this rule. See additional information on a course overload in the Tuition and fees charges (p. 47) section of this chapter.

The student's adviser and academic dean may permit a student to attempt more than 19 credits in any one semester. An "Overload Approval Form" may be obtained from the Student Services Center in Harris Hall or online at Records and Registration Forms (<http://rar.vcu.edu/forms/>).

Undergraduate nondegree-seeking students may take no more than 11 credits per semester. Overloads for nondegree-seeking students are not permitted. A nondegree-seeking student who wishes to take more than 11 credits must first be accepted as a degree-seeking student.

For information about credits earned concurrently at another institution, see concurrent registration below.

Credits allowable during summer sessions

Each summer course is designed to provide one semester's work. With careful scheduling, it is possible for students to earn as many as 15 credits during the summer if course work extends over the full summer calendar. Students may not take more than 15 credits without special permission from the Summer Studies Office, which is located at Hibbs Hall, 900 Park Avenue, Room 201; or phone (804) 827-4586.

Summer classes are intensive and demanding. Students experiencing academic difficulty should consider this advisory carefully before registering for summer classes.

Prerequisite enforcement

Qualified course prerequisites take the form of a course subject (HIST) and number (101). Unless otherwise specified, the minimum grade required to satisfy a stated course prerequisite is a D. These prerequisites are enforced at the time of registration and assume successful completion of any prerequisite courses for which a student is currently enrolled. A registration error message is returned if one or more qualifying course prerequisites are not met. Specific prerequisites for an individual course can be viewed via eServices by selecting the View Catalog Entry link. Students who are preregistered in a course with one or more prerequisites and subsequently fail to satisfy the prerequisite(s) will be removed from the course prior to the end of add/drop.

Audit registration

Class size permitting, a student may register for a course on an audit basis. A student may register for audit only during add/drop and late registration periods. Auditing a course means a student enrolls in a course but does not receive academic credit upon completion of the course. A student who registers on an audit basis is subject to attendance regulations of that class and may be administratively withdrawn by an instructor for a violation of class requirements for audit students, before or after the normal 10-week withdrawal deadline. A student who registers for audit may be subject to other course requirements at the discretion of the instructor. Audit students are charged the regular rate of tuition and fees. An audit course is counted as part of the student's semester load for the purposes of full- or part-time enrollment status but not for the purpose of financial aid.

Concurrent registration

To ensure credits earned concurrently at another institution are accepted for transfer at VCU, students should submit an online "Request to Take Courses at Another Institution" for evaluation by the VCU Transfer Center prior to taking the courses. Credits taken at another institution will not be counted toward enrollment level for financial aid purposes at VCU unless these courses are part of an approved articulation agreement that allows or requires courses to be taken at another institution.

Change in registration

Once a student has registered for classes, changes in registration must be made according to the procedures listed below. Whenever a student makes any change in registration, the student should keep a copy of the new schedule as verification of the change. Changes in registration may affect current and future financial aid. Students are advised to consult with a financial aid staff member before making any changes to their enrollment status. See the Financial aid (p. 53) section of this bulletin for detailed information on financial aid.

Cancellation of registration

Cancellation of registration must be completed before the end of the add/drop period. To cancel registration, a student must drop all classes using one of the following methods: 1) in writing to the Office of Records and Registration, 2) in person at the Student Services Center or 3) via eServices (<https://my.vcu.edu>). Refunds are issued in accordance with procedures described under the refunds section in the Tuition, fees and expenses (p. 47) section of this bulletin. For readmission guidelines, consult the Admission to the university (p. 46) section of this bulletin.

During the add/drop period

Exact dates for add/drop periods before and during the first week of classes are listed in the university academic calendar (<http://academiccalendars.vcu.edu>). Changes in registration during the add/drop periods can be made via eServices (<https://my.vcu.edu>). During the add/drop period, courses can be dropped and will not show on a student's permanent record. Changes from audit to credit or credit to audit must be made before the end of the add/drop and late registration periods and can be made at the Student Services Center in Harris Hall.

After the add/drop period

After the add/drop period, students may not attend classes in which they are not registered. Students cannot add a course after the add/drop period. The university academic calendar (<http://academiccalendars.vcu.edu>) lists the date when add/drop ends.

Drops are not permitted after the add/drop period has ended. However, students may withdraw from classes in accordance with prescribed procedures. To officially withdraw from a class, a student must obtain and file the appropriate form with the Office of Records and Registration or utilize eServices (<https://my.vcu.edu>). A student with an academic hold that prevents registration activity on eServices may go in person to the Student Services Center in Records and Registration to withdraw from courses.

If a student stops attending a class and fails to withdraw, a standard grade will still be assigned for that course. Withdrawals become a part of the student's academic record with a mark of W. In classes that do not conform to the normal semester calendar, the final withdrawal date is when half of the course is completed.

For further information see withdrawal from the university below. Students who withdraw from a course may be entitled to a refund. See the university refund policy in the Tuition, fees and expenses (p. 47) section of this bulletin.

Undergraduate degree requirements

The degree requirements that must be fulfilled by all degree-seeking students are listed below. For additional degree requirements, students must consult the school and major departmental sections of this bulletin.

In order for a student to be awarded a diploma, he or she must resolve any outstanding charges owed to the university. The university does not guarantee the award of a degree or a certificate of satisfactory completion of any course of study or training program.

Upper-level courses

A minimum of 45 credits in 300- to 500-level courses or the equivalent is required for a bachelor's degree.

GPA requirement

A minimum cumulative GPA of 2.0 (grade C) is required in order to receive a baccalaureate degree. Only credits taken at VCU are computed in the GPA.

Some programs may require a higher cumulative GPA. Students should consult the section of this bulletin that deals with their major for any GPA requirements above the university's 2.0 minimum.

Major area GPA

A minimum major GPA of 2.0 (grade of C) is required for graduation. The major area GPA will be calculated from all attempts in courses that are designated as required or optional in the student's major area, regardless of assigned grade. Exceptions to this calculation will be grades omitted due to a historical academic repeat or the grade exclusion policy. Students should consult with their department or program to determine if a higher GPA is specified for graduation. Only course credits taken at VCU are computed in the major GPA.

VCU REAL requirement

All newly admitted first-year and transfer undergraduate students entering fall 2021 and thereafter are required to successfully complete at least one VCU "REAL" experiential learning activity. This requirement may be satisfied by successfully completing a 300-level (or higher) course that has received a REAL attribute of Level 2, 3 or 4 or through an approved "REAL" co-curricular experience that has received a REAL attribute of Level 3 or 4.

Having once satisfied the REAL experiential learning requirement, the student will not have to fulfill it again, including cases of a returning student who is pursuing an additional baccalaureate degree, a student who is enrolled in multiple programs and a student who may change majors. Courses and co-curricular activities that satisfy the REAL requirement may be searched for and found in the VCU Schedule of Classes and through the VCU Student Opportunity Center, which is accessible through the VCU REAL website, real.vcu.edu.

Total credits

Each undergraduate VCU degree requires a minimum of 120 semester credits. The total number of semester credits required for graduation depends on the student's major and area of concentration. Specific information on total credit requirements is detailed under individual degree program descriptions in this bulletin.

25 percent rule

Degree candidates must complete at least 25 percent of the credit semester hours required for their bachelor's degree program at VCU, including at least 30 of the last 45 credits. Active-duty service members, reservists and National Guardsmen may complete the minimum of 25 percent of their degree requirements at any time while enrolled at VCU and are exempt from the "30 of the last 45 credits" requirement. Other exceptions to this rule may be granted by the Academic Regulations Appeals Committee. If ARAC approves the request for a waiver, the approved credits must be completed within three years from the time of the waiver.

This requirement does not apply to students who participate in VCU-sponsored programs abroad or who earn course credit at a cooperating university through VCU domestic and international university exchanges

or who are pursuing an undergraduate certificate independently of a baccalaureate degree.

Categories of student enrollment

VCU provides a variety of ways in which a student may pursue a course of study.

Degree-seeking student

This student has fulfilled the admission requirements of the university and a particular school or college and is enrolled in a bachelor's (four-year) degree program or a health sciences preparatory program. A degree-seeking student may engage in studies as either a full-time student (12 credits or more per semester) or as a part-time student, and may enroll for day and/or evening classes.

Furthermore, a degree-seeking student may pursue a program of study in one of the following ways:

1. **As a declared major in a school or college.** The student who declares a specific major when entering VCU begins a course of study leading to a degree in the declared major. (The student may change the major at a later date.)
2. **As a pre-health major.** The student declares a pre-health major (clinical laboratory sciences, dental hygiene, nursing or clinical radiation sciences) and completes the prerequisites for future eligibility to apply for admission into the health science major. Completion of the pre-health major does not guarantee admission into the desired health sciences program. Pre-health majors are not degree-granting programs. Students should consult the program admission requirements for the intended program they wish to pursue.
3. **As an undeclared student.** Students who have not selected a specific major, may select the "undeclared" category. These students are advised through University Academic Advising. Students must define these goals and declare a major area of study no later than the semester in which they complete 60 credits, generally after two years of study.

Nondegree-seeking student

A student who meets the requirements for undergraduate eligibility may enroll for credit as a nondegree-seeking student in day and/or evening classes at VCU without seeking admission to a degree program.

Undergraduate nondegree-seeking students are advised about course selections and aided in educational and vocational planning by University Academic Advising and may schedule an appointment by calling (804) 827-8648. Such students are ineligible for financial aid.

Permission to enroll as a nondegree-seeking student does not ensure later admission as a degree-seeking student. Continuance in this status is dependent on academic performance, and nondegree-seeking students are subject to the continuation regulations stated in this chapter.

The undergraduate nondegree-seeking student may pursue course work in one of the following categories:

1. **As a nondegree holder.** This student has not previously earned a baccalaureate degree. The student may take a maximum of 11 credits per semester (part time).
2. **As a degree holder.** This student has previously earned a baccalaureate degree at VCU or another accredited institution and

plans to pursue additional undergraduate course work. The student may take a maximum of 19 credits per semester.

3. **As a transient student.** This student is presently seeking a baccalaureate degree at another institution of higher education, is in good standing at that institution and plans to pursue a course of study at VCU for no more than two semesters with the intent of transferring the work back to the home institution to complete the degree. The student may take a maximum of 19 credits per semester and must present a letter from the home institution approving the student's status as a transient student at VCU. (Refer to the Nondegree-seeking student guidelines (p. 28) section of this bulletin).

Credits earned as a nondegree-seeking student are recorded on the student's permanent academic record. There is no limit placed on the number of credits that can be earned in this classification. Nondegree-seeking students who wish eventually to earn a baccalaureate degree at VCU are encouraged to seek admission to a degree program before accumulating 22 semester credits.

Nondegree-seeking student guidelines

The first time a student registers as a nondegree-seeking student, he or she must meet one or more of the following conditions of eligibility as appropriate to his or her status:

1. Be a high school graduate or GED holder for one year before the intended semester of entry
2. Be an applicant who meets established admission requirements
3. Be a transfer student who is eligible to return to the former institution or has been out of school for at least one year for a first suspension or five years for the second suspension incurred at any institution
4. Be a former VCU student who is eligible to return (If the student has been suspended from VCU for academic reasons, eligibility for future enrollment must be re-established in accordance with procedures outlined in the Readmission guidelines (p. 46) section of the "Admission to the university" chapter and the suspension policies (p. 24) outlined in this chapter.)
5. Be a bachelor's degree holder taking undergraduate courses
6. Be an eligible transient student (A transient student must present, before or at the time of registration, a letter from the home institution, which states that the student is in good standing, has permission to study at VCU for transfer back to the home institution and which outlines the courses to be studied at VCU.)
7. Be a non-U.S. citizen who has been cleared through the Global Education Office

Students are responsible for knowing the terms of eligibility and for stating that they are eligible for nondegree-seeking student status.

The first time a student registers as a nondegree-seeking student, proof of eligibility is required. Students must provide a signed "Certificate of Eligibility" form, which is available online at Records and Registration Forms (<http://rar.vcu.edu/forms/>). A student also may establish eligibility by providing verification of high school graduation, GED certification or verification that he or she is eligible to return to the previous institution of study.

If the student's eligibility cannot be verified or if the student is found ineligible, the grade on the course taken is changed to no credit (NC).

An administrative hold is placed on future registrations until eligibility is established.

Nondegree-seeking students who hold bachelor's degrees are classified as DHG (degree-holder graduate) if they enroll in one or more graduate courses. DHG students are charged the graduate rate. Nondegree-seeking students who hold undergraduate degrees are classified as DHU (degree-holder undergraduate) if they enroll in all undergraduate courses. DHU students who enroll in 12 or more credits are charged at the full-time undergraduate rate. If they make changes to their course enrollment by the end of the add/drop period, their classification and charges change in accordance with these guidelines.

Degree-holding nondegree-seeking students enrolling in graduate courses should refer to the online Graduate Bulletin.

Nondegree-seeking students who plan to earn a degree eventually must apply for degree admission and, depending on their credentials, may be required to complete 15 credits with an earned GPA of 2.0, which includes a minimum of two courses (totaling six credits) required by their degree curriculum.

Students studying on foreign visas, because of U.S. immigration and naturalization regulations, are expected to enroll as full-time students and usually are not permitted to enroll as nondegree-seeking students.

Medical leave of absence

In certain circumstances, where a student's health condition impedes their academic progress, a student may decide they need to temporarily leave the university to focus appropriate attention and effort on the treatment and recovery necessary for a healthy return to their academic pursuits. In these cases, the student may petition the dean of students' office in the Division of Student Affairs for a medical leave of absence from all courses prior to the last day of classes as published in the VCU Academic Calendars (<https://academiccalendars.vcu.edu/>), and before a final class grade has been assigned and/or posted to their academic record. A staff member in the dean of students' office (<https://students.vcu.edu/find-resources/dean-of-students/>) in the Division of Student Affairs (<https://students.vcu.edu/>) will meet with the student to discuss their need for a medical leave of absence and the extent to which reasonable academic accommodations may enable the student to remain enrolled. The staff member will provide information regarding the medical leave of absence and reinstatement processes, including any reasonable conditions the student will be required to satisfy in order to be reinstated. The university will determine appropriate conditions for reinstatement based on an individualized assessment of the student's reason for taking leave, including consideration of current medical knowledge and/or the best available objective evidence of the student's ability to function academically at the university with or without accommodations. Careful consideration will be given to available opinions and recommendations of a qualified health care professional who treated the student.

If the request for medical leave of absence is approved, the student's academic record will reflect a grade of W for all enrolled courses that term. No special designation for the reason of the withdrawals is made on the academic record, and tuition and fees are charged in the same manner as other withdrawals. Refunds of tuition and fees due to a leave of absence will follow the VCU refund policy, which is published in the Tuition, fees and expenses (p. 47) section of this Bulletin. Certain academic programs have specific continuance standards; students in those programs should consult their program adviser to determine the impact of a leave of absence on the student's status and progress

in the program. Students should consult the Office of Financial Aid to understand the potential negative impact of a leave of absence or withdrawal, for any reason, on their academic progress and future financial aid in relation to satisfactory academic progress.

An undergraduate student who needs to withdraw for health reasons from one or more particular courses, rather than from all courses, may request course withdrawal as an academic accommodation through the Student Accessibility and Educational Opportunity (<https://saeo.vcu.edu/>) office or, for students in health sciences programs, the Division for Academic Success (<https://das.vcu.edu/>). The university may grant selective course withdrawal as a reasonable accommodation to enable qualified students to continue in an academic program. More information about how to seek an accommodation for selective withdrawal for health reasons can be found on the SAEO website (<https://saeo.vcu.edu/>).

Requests for withdrawals for health reasons submitted after the last day of classes in a term are requests for retroactive action and are reviewed by the Academic Regulations Appeals Committee (p. 22).

Once a leave of absence has been granted, a registration hold is placed on the student's record, which prevents registration activity for any future term. If the leave is granted after preregistration for the following academic term has begun, then, in addition to the registration hold, the student's registration for the following term(s) will be cancelled and all courses will be dropped. A student on leave must complete the university's medical leave of absence reinstatement process and be approved for reinstatement in order for the registration hold to be removed.

In the event that the university reasonably determines a student's health poses a significant risk to the health or safety of any member of the university community, including the student, patients or others, and the student is unable or refuses to initiate steps to take leave, administrative leave may be made by the dean of students' office in consultation with the senior vice provost for student affairs (or designee) and, as appropriate, relevant faculty and a qualified health care professional. The student placed on administrative leave may submit a written appeal to the senior vice provost for student affairs (or designee). The appeal must be filed within three business days (unless otherwise noted) of being placed on administrative leave.

Medical leave of absence reinstatement process

Undergraduate students on medical leave are eligible to re-enroll at VCU once they have completed the medical leave of absence reinstatement process. The goal of the reinstatement process is for the student to demonstrate that they are ready to return to the university environment and resume study in their academic program. The student must provide evidence of their readiness to return, including documentation from a qualified health care professional who treated the student during their leave. More information regarding the reinstatement process, including all forms and documents, can be found on the dean of students' website (<https://students.vcu.edu/find-resources/dean-of-students/>).

The dean of students' office (<https://students.vcu.edu/find-resources/dean-of-students/>) in the Division of Student Affairs (<https://students.vcu.edu/>) will review the student's request for reinstatement and determine whether the student has completed all conditions for reinstatement, in consultation with Student Accessibility and Educational Opportunity (<https://saeo.vcu.edu/>), the Division for Academic Success (<https://das.vcu.edu/>), University Student Health Services (<https://health.students.vcu.edu/>) and/or University Counseling Services (<https://>

counseling.vcu.edu/), as appropriate. Such review will consider any medical or other relevant information submitted by the student and will be based on an individualized assessment of each student, including consideration of current medical knowledge and/or the best available objective evidence of the student's ability to function academically at the university with or without accommodations. Careful consideration will be given to the available opinions and recommendations of a qualified health care professional who treated the student. As part of this individualized assessment, the student may be required to undergo an evaluation, including a medical or psychological evaluation, by an independent and objective health care professional designated by the university. The student may also be required to release the evaluation to University Student Health Services (<https://health.students.vcu.edu/>), University Counseling Services (<https://counseling.vcu.edu/>) and other administrators, as appropriate.

Graduation information

Graduation application

VCU confers degrees in May, August and December. A commencement exercise is held in May for May graduates only. A commencement exercise is held in December for August graduates and December graduates. Each student who expects to complete the degree requirements by the end of a semester or summer session must apply to graduate in accordance with dates published on the university academic calendar (<http://academiccalendars.vcu.edu>). Candidates who do not graduate at the end of the semester for which they have applied must reapply.

Students who may have enough credits to be eligible to graduate will be notified by email of the graduation process each semester. The email will contain submission deadlines and steps to begin the graduation checkout process. Eligible students should apply to graduate by the dates indicated in the email and noted in the university academic calendar (<http://academiccalendars.vcu.edu>), which is available online. Departments are notified once a student applies to graduate. Students should schedule a conference with an adviser well in advance of the deadline to ensure they are on track for graduation and should note that approval by the department chair and dean is also required.

Students planning to graduate in the current semester should proceed as follows:

- Complete the Apply to Graduate procedure on eServices (<https://my.vcu.edu>). The undergraduate graduation application will be provided during this process. **If a student is graduating from more than one program (ex. dual or double degree program), they must complete the entire graduation checkout process through eServices for each program. The student's department will be notified once all steps are completed.**
- Complete the undergraduate graduation application according to the instructions provided. A separate set of graduation forms must be completed and submitted for each program from which students intend to graduate.

No degrees will be conferred unless students apply to graduate.

Degrees will be awarded and diplomas issued in a current semester only. Students who do not complete the graduation checkout process in the semester in which they actually complete their programs will be awarded their degrees in the semester in which they apply to graduate. In such

cases, a text notation will be added to the transcript to indicate the date that course work for the degree was completed.

Graduation checklist

The total number of semester credits required for graduation depends upon the degree program. Specific information may be found under degree program descriptions. In addition to the specific requirements listed by the college/school/department, the following graduation checklist for undergraduate students summarizes all general requirements for graduation and issuance of a diploma.

- Overall undergraduate GPA and major area GPA must be, at minimum, 2.0.
- Student must have completed 25 percent of the semester-hour credits required for the bachelor's degree in residence at VCU, including at least 30 of the last 45 credits.
- Student must have earned a minimum of 120 credits, including transfer credits.
- Student must have earned a minimum of 45 upper-level credits.
- All grades of Incomplete (I), Continued (CO), Progress (PR), Not Recorded (NR) and No Grade (NG) must be converted to final letter grades no later than the last day of class of the semester in which the candidate plans to graduate.

Students are reminded to complete a final check of their academic records before they exit the university to ensure that all temporary grades have been converted, that the record accurately reflects their academic histories and that all degrees have been posted. Requests for changes to the academic record must be made within the first six months following graduation, but this requirement may be superseded by other university-specific deadlines (e.g., those governing requests for a change of grade). Commonwealth of Virginia record-retention requirements may affect the university's ability to address requests for changes to the academic record. Students must settle all financial obligations to the university prior to the issuance of a diploma.

Graduating with honors

Dean's list

The dean's list is a recognition of superior academic performance. A student is automatically placed on the dean's list for each semester in which a minimum semester GPA of 3.5 is attained, based on a minimum of 12 semester credits, excluding courses graded credit/noncredit, with no grade below C. A notation is placed on the student's academic record. Students earning marks of I or PR are ineligible for the dean's list for the semester in which these grades were earned.

Laudatory honors

Candidates for a baccalaureate degree who complete a minimum of 45 credits at VCU may qualify for graduation honors. Cum laude is awarded for a 3.30 to 3.59 GPA, magna cum laude is awarded for a 3.60 to 3.89 GPA and summa cum laude is awarded for a 3.90 GPA or better, at the time of graduation.

Calculation of the GPA for honors determination is based on grades received for all courses taken for credit at VCU, as well as for credits accepted for transfer at VCU. However, to qualify for graduation honors, a student's GPA for courses taken for credit at VCU must be at least as high as the minimum required for the specific honor bestowed. Recognition of graduation honors is made on the student's diploma, permanent record and in the commencement program (because of the early publication of

the commencement program, the honor status from the last semester prior to graduation will be reflected in the commencement program).

Students who have participated in the Honors College and who have met requirements of that program may graduate with "University Honors." Please refer to The Honors College (p. 621) section of this bulletin for more information.

Special notes for graduating financial aid recipients

If a student plans to continue enrollment at VCU after graduation and wants financial aid, he or she must apply and be accepted as a degree/certificate-seeking student and enroll at least half time to meet financial aid enrollment requirements. If a student received federal loan funds during enrollment at VCU, he or she will be required to complete exit counseling. The student's diploma or transcript will not be released until he or she completes this required obligation.

Exit counseling required

Exit counseling is required for students receiving the following loans: William D. Ford Federal Direct Loans (subsidized or unsubsidized), Federal Perkins Loan, Health Professions Student Loan, Nursing Student Loan, Loans for Disadvantaged Students, Primary Care Loan and University Long-term Loan. Borrowers will be notified about exit counseling during the semester in which they are scheduled to graduate or drop below half-time enrollment. Visit the VCU Office of Financial Aid website for additional information about exit counseling for the Direct Loan program (<http://www.finaid.vcu.edu/assistance/loans/exit.html>).

Commencement participation

When a student has submitted a degree application for spring graduation but does not meet degree requirements due to extenuating circumstances, the student's dean may permit the student to participate in commencement exercises. Permission may be granted only when six or fewer credits are lacking for degree completion and the student demonstrates his or her intent to complete the needed credits by the end of the summer session.

When such an exception is made, the dean confirms the following conditions to the student:

- Participation in the commencement ceremonies does not mean the student has been awarded a degree.
- The degree will be awarded in the semester or summer session in which all degree requirements have been met.
- The exemption is made only to accommodate the student's request and does not obligate VCU to ultimately grant a degree unless all requirements and conditions have been met.

MCV Campus graduation candidates for degrees to be conferred at the close of the spring semester must be present at the universitywide graduation ceremony to receive their degrees. No individual may be exempt from this regulation unless excused by the dean of his or her school.

UNDERGRADUATE STUDY

Virginia Commonwealth University currently offers more than 60 undergraduate programs in fields ranging from the arts and humanities to science and engineering to business and education. The University Undergraduate Curriculum Committee performs major coordination among these programs through review of proposed curricular revisions, deletions and additions. Chaired by the senior vice provost for academic affairs, the committee's voting membership comprises two elected faculty members from each academic unit that offers undergraduate degree programs.

Admission to the university

Office of Admissions
821 West Franklin Street
Box 842526
Richmond, Virginia 23284-2526
Phone: (800) 841-3638, (804) 828-1222
Fax: (804) 828-1899
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vcu.edu/admissions

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Bernard Hamm, university registrar

General policy governing admission and enrollment

As a comprehensive, metropolitan, public institution, Virginia Commonwealth University seeks to provide excellent higher education for those who will profit from an intellectually challenging experience. The university encourages applications from people who are sincere in their desire to study in an environment where excellence in teaching, research, scholarly activities and community services is stressed.

Recognizing the value of a diverse student body, the university invites applications from all qualified persons without regard to age, race, color, national origin, gender, religion, sexual orientation, veteran's status, political affiliation or disability. Although the university has a primary responsibility to educate Virginia residents, the value and contribution of a diverse student body is recognized and the enrollment of students from other states and countries is encouraged. Entrance requirements are in

full compliance with all applicable federal and state statutes, rules and regulations.

All people admitted to and enrolled in the university are classified as either degree-seeking or nondegree-seeking students. Degree-seeking students are presumed to be working toward a degree in approved educational programs, while nondegree-seeking students are permitted to enroll in classes on a semester basis. Recognizing a commitment to educate students who wish to take courses primarily for self improvement or to continue lifelong education, the university also encourages the enrollment of nondegree-seeking students. The university enrolls as many qualified degree-seeking and nondegree-seeking students as resources permit. When resources are limited, spaces go to those who present credentials showing the greatest potential for academic success in degree programs.

The Board of Visitors establishes general admission policies on the recommendation of the university administration. Admission criteria and policies are recommended by the Office of Admissions as well as the deans of the schools and colleges of the university on the advice of their faculties. Entrance requirements for schools and the colleges within the university may differ. Various departments may have unique admission requirements, such as examinations, auditions, portfolios, interviews, licensure or language proficiency, in order to evaluate a student's potential for success in selected programs and courses. The university selects applicants who present the strongest qualifications in scholastic achievement and potential, standardized examinations, and through the holistic review of other evidence of potential including strength of character. Each applicant is reviewed on an individual basis.

Admission guidelines

The credentials of undergraduate applicants for admission to degree status are reviewed on an individual and holistic basis. Candidates for admission to VCU are reviewed based on their academic merit; leadership, community service and talent (when applicable) also may be considered. First-time freshman applicants should review the freshman admission guidelines below. Transfer applicants should review the transfer applicant guidelines (p. 34) in this bulletin. Applicants interested in enrolling as nondegree-seeking students should read the **nondegree-seeking student guidelines** in the academic regulations section of this bulletin.

Freshman undergraduate admission guidelines

An applicant for degree status must be a graduate of an accredited secondary school (or its equivalent) or hold a GED or have taken a State Department of Education approved High School Equivalency examination. A high school student should submit an application for admission after completion of the junior year, unless applying for the early admission or advanced scholar programs, in which case the application should be submitted after the sophomore year.

All freshman applicants under the age of 22 are required to submit scores from the SAT or ACT, however some situations exist where testing is optional. Additional information on optional and required test scores (<http://www.ugrad.vcu.edu/apply/freshman/requirements.html>) for freshmen is available on the Office of Admissions website.

The college preparatory curriculum is highly preferred, and a minimum of 20 units is required for admission to all programs on the Monroe Park Campus, with the following minimum distribution of subjects: four units in English; three units in mathematics, one of which must be algebra I and one of which must be geometry or algebra II; three units in science,

one of which must be a laboratory science; and three units of history or social sciences or government. Students are encouraged to present at least three units in a modern or ancient language or two units of two foreign languages.

In addition, preference is given to candidates who submit the Advanced Studies diploma or its equivalent. Information about the Advanced Studies diploma can be found on the State Council of Higher Education for Virginia (<http://www.schev.edu/index/students-and-parents/prepare/high-school-graduation-requirements/>) website.

Freshman applicants planning to pursue postgraduate studies in the health professions (dentistry, medicine, occupational therapy, pharmacy and physical therapy) are advised to choose a pre-health advising track in addition to their academic major. For more information about professional health advising tracks and majors, please see the Academic advising (p. 57) section.

The Honors College offers qualified students interested in health science the opportunity for early acceptance into many of the MCV Campus programs. See the Honors College (<http://www.honors.vcu.edu/guaranteed/>) website for details.

Freshman applicants who are not admitted with degree status may be eligible to enroll at VCU as nondegree-seeking students provided one year has elapsed since their actual or intended high school graduation date.

Nondegree-seeking student guidelines

Eligibility guidelines for nondegree-seeking students (p. 28) may be found in the academic regulations section of this bulletin.

Transfer applicant admission guidelines

The university undergraduate transfer policy and the state policy on transfer agreement may be found in the admission guidelines for transfer students (p. 34) section of this bulletin.

School of the Arts freshman admission guidelines

Students applying to the School of the Arts must submit the standard university undergraduate application in addition to supplemental materials. The School of the Arts faculty reviews all applications to programs in the School of the Arts. All visual arts and design applicants and all technical theatre applicants are required to submit a visual portfolio with their application. All performing arts applicants are required to visit VCU for an audition and/or interview. Applicants to the cinema and art history programs also must submit writing samples. For additional supplemental requirements and online application materials (<https://arts.vcu.edu/admissions/how-to-apply/>), visit the School of the Arts website.

International admissions

VCU encourages qualified international students, both immigrant and nonimmigrant, to seek admission to the university. See the Office of Admissions (<https://www.vcu.edu/admissions/apply/international/>) website for additional information.

As required by U.S. regulations and by VCU admission policies, nonimmigrant applicants must demonstrate satisfactory academic achievement, adequate English proficiency and the ability to finance all educational and living expenses. Applicants can refer to the freshman admission guidelines (p. 32), transfer admission guidelines (p. 34)

and admission procedures (p. 33) elsewhere in this section for specific requirements.

Admission procedures

It is the responsibility of the applicant to ensure that all required admission documents are forwarded to the Office of Admissions before the deadline. (Refer to the freshman application deadlines (<https://www.vcu.edu/admissions/apply/freshman/>) or transfer application deadlines (<https://www.vcu.edu/admissions/apply/transfer/>)).

Applications and supporting credentials for undergraduate programs offered on both campuses must be submitted to the Office of Admissions.

All applications and supporting documents become the property of the university and are not returned to the applicant. After all required documents have been received, candidates are notified in writing of the decision by the Office of Admissions.

The following must be submitted to the Office of Admissions when applying for an undergraduate degree program:

1. **Official application form.** Candidates seeking admission or readmission to the university in an undergraduate degree program must file a Common Application (first-time freshman applicants only) or the VCU online application before the specified deadline. Students planning to complete a second baccalaureate degree also must submit this application. Students will be able to check their application status online to be sure the university has received all required materials (admission decisions are not provided online). Care should be taken to read the admissions guidelines in this bulletin, to follow the directions accompanying the application and to complete all information requested. Incomplete or incorrect applications will result in a processing delay.
2. **Application fees.** Application fees are nonrefundable and should be submitted via credit card when applying online. Do not send cash, checks or money orders. For current application fees, see the Office of Admissions website (<https://www.vcu.edu/admissions/>).

The application fee is nonrefundable. Applications may not be processed if submitted without a fee or the applicant will be billed. Students currently enrolled in programs on the VCU Monroe Park Campus who are applying to undergraduate programs on the MCV Campus are not required to remit the application fee.

3. **Official transcript(s).** Freshman applicants are required to submit their official high school transcript(s) showing course work completed to date. The secondary school record should contain courses and grades earned, rank in class and overall GPA. A final transcript also is required showing date of graduation, overall GPA and rank in graduating class if available.

Transfer candidates must request the registrar of each college attended to send an official transcript of their course work. Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits also must submit their secondary school records. Priority application review will be given to applicants who have completed at least 30 credits at their former institution(s) and who apply and submit all required documentation by the recommended application deadline.

Applicants to the School of Nursing undergraduate program on the MCV Campus must submit official transcripts from all colleges, universities and hospital schools/programs attended.

For readmission candidates, the Office of Admissions will obtain the student's VCU transcript. Applicants who have attended other colleges since leaving VCU must request the registrar of each college to send official transcripts to the Office of Admissions.

4. Test scores.

- a. Freshman applicants (high school graduates and GED holders) 22 years of age or younger must submit SAT or ACT scores and, if applicable, an official copy of their GED scores. Electronic submission is preferred.
 - i. **Score optional review**
Excluding the exceptions noted below, freshman applicants with a minimum high school GPA of 3.3 may request that their application be reviewed without submitting standardized test scores. Applicants should request to be considered for admission to the university without test scores on the application for freshman admission.
 - ii. **Exceptions to score optional review**
SAT or ACT scores will be required for freshman applicants who wish to be considered for VCU's merit-based scholarships (the Presidential, Provost and Deans' scholarships), students applying to the VCU Honors College and the College of Engineering, home-schooled students, and non-native English speakers. Applicants in these categories may not request the score optional review.
- b. Transfer applicants 22 years of age or younger and with fewer than 30 semester/45 quarter credits of college work must submit SAT or ACT scores.
- c. Applicants whose native language is one other than English must sit for a test of English proficiency and arrange for the testing agency to send the results to VCU (code 5570). Please visit the Office of Admissions website (<https://www.vcu.edu/admissions/apply/international/undergraduate-applicants/#tabs-193114>) for more information and details about required test scores. Some MCV Campus programs also may require Test of Written English or Test of Spoken English scores.

5. **Supplemental application requirements.** School of the Arts applicants must submit supplemental materials as described on the school's website (<https://arts.vcu.edu/admissions/how-to-apply/>). Applicants to all undergraduate programs on the MCV Campus must submit supplemental application materials as described online on the admissions and aid section of the VCU website (<https://www.vcu.edu/admissions/apply/>).

Freshman application deadlines

Program-specific application deadlines for freshmen are available in the admissions and aid section of the VCU website (<https://www.vcu.edu/admissions/apply/freshman/>).

Admission notification

Freshman applicants accepted to the university for the fall semester are notified by letter of the conditions of their acceptance by April 1 if they meet the Jan. 15 recommended deadline. Freshman applicants who apply under the regular admission process may receive early notification of their acceptance if they present exceptional admission credentials. Transfer applicants to programs on the Monroe Park Campus will be notified of an admission decision on a rolling basis.

Information on advisement and registration procedures, the immunization form, and housing information is included with the acceptance letter. Virginia requires that all full-time students enrolling for the first time in any state institution of higher education furnish an immunization record from a qualified licensed physician. New VCU students must submit their immunization form to University Student Health Services.

When an applicant is tentatively accepted to the university, a final transcript is required to complete the individual's admission file. If the official transcript is not received by the start of the semester for which the student was accepted, an administrative hold will be placed on future registrations until the credentials are received establishing the student's eligibility. The Office of Financial Aid will not be able to disburse funds until the university has received final transcripts.

The university reserves the right to rescind offers of admission if the final documents indicate that the applicant no longer satisfies the entrance requirements upon which acceptance was granted.

Responding to the offer of admission

Fall freshman applicants accepted to the university by April 1 must notify the Office of Admissions of their intent to enroll or not to enroll by May 1. Fall freshman applicants, if accepted after April 1, must notify the university within two weeks of receiving their notification of admission.

Fall transfer applicants accepted to programs on the Monroe Park Campus must notify the Office of Admissions of their intent to enroll by June 1 or two weeks after receiving their letter of admission. Fall applicants to the health sciences programs must respond within the time frame listed on their acceptance letters as determined by the individual department. All students accepted for the spring semester must respond to the offer of admission within two weeks of receiving their notification of admission.

When accepting the offer of admission, all immunization records should be sent to University Student Health Services.

A deposit is required of applicants who accept VCU's offer of admission. The deposit is credited to the student's account with the university and is not deferrable to a future semester. Deposits are not refundable after May 1. Students who have received and accepted a university scholarship are not required to submit a deposit. Students experiencing economic hardships may request a waiver of deposit by providing a copy of their Student Aid Report along with their response form. The decision to grant a waiver is based on information submitted to the university on the student's Free Application for Federal Student Aid.

Admission guidelines for transfer students

Transfer applicants are considered for admission to the university provided they present evidence of good standing at all previous

institutions of higher learning; to be competitive for admission consideration into VCU, they should present a minimum cumulative GPA of 2.5 from all accredited institutions. Priority application review will be given to applicants who have completed a minimum of 30 credits at their former institution(s) and submit all required documentation by the recommended application deadline. Applicants with a minimum of 30 semester (45 quarter) credits are not required to submit high school transcripts or SAT or ACT scores (unless required by the applicant's intended degree program).

Transfer applicants who have earned fewer than 30 semester (45 quarter) credits will be reviewed on the basis of their high school performance; they must submit their high school transcripts in addition to their credentials from all accredited institutions of higher learning. Transfer applicants who have earned fewer than 30 semester (45 quarter) credits and who are 21 years of age or younger must submit SAT or ACT test results and also must meet specific guidelines listed in the Freshman undergraduate admission guidelines (p. 32) section of this chapter.

The undeclared major is not open to students with 60 or more college credits. Transfer applicants will be notified of an admissions decision on a rolling basis until the class is filled.

Some programs have additional requirements for admission as a transfer student. Transfer applicants should consult the appropriate area of this Bulletin or the departmental website for admission requirements.

Transfer applicants who are not admitted with degree status may be eligible to enroll as nondegree-seeking students as determined by the Office of Admissions.

Transfer applicants ineligible to return to a former institution because of an academic suspension may not enroll at VCU for a period of one year for the first suspension and five years for the second suspension.

Transfer applicants who have been suspended from another institution for nonacademic or disciplinary reasons are referred to the Office of the Senior Vice Provost for Student Affairs for preadmission clearance.

Additional information for transfer students is available on the VCU Office of Admissions website (<http://ugrad.vcu.edu/apply/transfer/>) as well as the VCU Transfer Center's (<http://transfer.vcu.edu>) website.

University undergraduate transfer credit policy

An official evaluation of transferable credits for applicants to both Monroe Park Campus and MCV Campus programs is made by the VCU Transfer Center after the applicant has accepted an offer of admission to the university. The Transfer Center will provide an unofficial evaluation of transferable credits to prospective transfer applicants upon request. The acceptance of transfer credits is based on the following guidelines.

Accreditation

1. Collegiate work will be considered for transfer credit from postsecondary institutions that are accredited by one of the six institutional accrediting associations.
 - Middle States Commission on Higher Education
 - Higher Learning Commission
 - New England Association of Schools and Colleges, Commission on Institutions of Higher Education
 - Northwest Commission on Colleges and Universities

- Southern Association of Colleges and Schools, Commission on Colleges
 - Western Association of Schools and Colleges
2. VCU may accept for transfer college-level credits earned at institutions accredited by other accreditation agencies recognized by the U.S. Department of Education that have developed formal articulation agreements with VCU. Articulation agreements (<https://transfer.vcu.edu/prospective/agreements/>) are posted on the Transfer Center website.
 3. Collegiate work will be considered for transfer credit for courses completed at colleges and universities outside of the U.S. which are accredited by one of the six institutional accrediting associations listed previously or approved by the Ministry of Education (or other appropriate governmental agency) of the country in which they are located. Students seeking transfer credit from international institutions are required to submit an official transcript and a course-by-course evaluation completed by a member of one of the following organizations:
 - National Association of Credential Evaluation Services. A list of current member organizations (<http://www.naces.org/members.html>) can be found on the NACES website.
 - Association of International Evaluators, Inc. A list of current members (<http://aice-eval.org/members/>) can be found on the AICE website.

Governing policies

1. The evaluation and award of transfer credit will be based on official transcripts. Students are required to submit official transcripts for all post-secondary institutions attended. To be eligible for evaluation, course work must appear on an official transcript from the institution that offered the course work and initially conferred the credit in question. Students do not retain the right to pick or choose certain courses for transfer. All transferable work will be posted to the VCU transcript. Once awarded, transfer credit will not be removed from a student's VCU record for any reason, unless requested by the Office of Records and Registration.
2. Only courses with grades of C- or higher will be transferable. This includes courses taken on the pass/fail or pass/no pass systems and courses taken for grades of satisfactory or unsatisfactory that receive earned credits and a satisfactory grade (or comparable passing grade) from the transfer institution as long as the comparable passing or satisfactory grade is equivalent to a grade of C- or better. Transfer credits graded as pass/fail will not be included in the computation for determination of academic honors at VCU.
3. VCU follows a semester calendar and posts credits to the VCU transcript in semester hours. Course work completed at institutions that follow a semester-based academic calendar will be posted to the VCU transcript with the semester hour total attempted for each course. Course work completed at institutions on non-semester-based academic calendars will be converted and posted to the VCU transcript with the semester hour equivalent attempted for each course. For example, the conversion rate for quarter-hour credits is one quarter-hour credit to two-thirds of a semester-hour credit.
4. Whenever possible, courses accepted for transfer are evaluated and posted on the VCU transcript as VCU course equivalents to ensure those credits apply to VCU degree requirements. Transferable courses that do not have equivalents at VCU are posted as either lower-level (1XX or 2XX) or upper-level (3XX or 4XX) electives. A full list of equivalency decisions on transferable courses is maintained

on the course equivalency tables located on the Transfer Center's website (<https://transfer.vcu.edu/prospective/equivalency/>).

5. Courses completed at institutions outside of the U.S. will be evaluated based on a course-by-course evaluation completed by a member of either the National Association of Credential Evaluation Services or the Association of International Evaluators, Inc. In addition to a course-by-course evaluation, students with international credit may be required to provide course information such as a syllabus (translated into English, if necessary) to the VCU Transfer Center for the purposes of determining VCU course equivalents. VCU does not accept international credit for English writing composition courses unless the school holds regional accreditation from a U.S. accrediting agency or the syllabus is reviewed and approved by the Department of Focused Inquiry. VCU does not accept English language courses for transfer.
6. No distinction will be made by VCU regarding credit received for college courses that are taken through dual enrollment arrangements with high schools. Students who earn dual enrollment college credit must submit official transcripts to VCU from the college awarding the credit.
7. Credit granted by another institution for prior learning will not be accepted **based on that institution's transcript**. To receive credit for prior learning (e.g. College Level Examination Program, Advanced Placement, International Baccalaureate, Cambridge International Examinations, military training, etc.), the student must present official documentation from the original provider of the nontraditional experience. More information about the type and amount of credit accepted is located in the bulletin section on "Additional sources of academic credit (p. 38)."
8. The following types of credit are not transferable and will not count toward a degree:
 - Credits earned at other institutions carrying a grade of D or passing/satisfactory grade equivalent to a D (unless the D grade is earned at a European institution and converted to a C grade through the European Credit Transfer System)
 - Placement credit granted by another institution
 - Remedial or developmental courses
 - Technical, occupational, vocational and some workforce courses from two-year institutions (unless approved for transfer within an approved articulation agreement of transfer pathway of study)
9. VCU will accept credits for transfer regardless of when they were completed. However, time limits exist in some academic programs, such as in information systems or accounting, to ensure that transfer credits meet present-day academic standards. Students should consult with the Transfer Center regarding these time limits. Credits earned in those program areas with time limits will transfer as electives rather than VCU course equivalents.
10. VCU will accept credits for transfer regardless of the modality of the course delivery, such as online courses. However, due to certain programmatic accreditation requirements, students in the natural sciences may be required to complete in-person labs for major-specific science course requirements after transfer.
11. Accepted transfer credit contributes to hours earned and toward fulfillment of degree requirements at VCU. The grades of accepted transfer courses are recorded as TR on the student's VCU transcript. Hours attempted and quality points earned are not recorded.
12. Accepted transfer credits are not included in the transfer student's overall GPA at VCU. The GPA for fulfillment of VCU degree requirements is computed only from courses taken at VCU. **However,**

the grades and quality points of transferred courses are evaluated in the computation determining graduation honors.

13. A maximum of 90 total undergraduate transfer credits will be accepted. Regardless of how many transfer credits are accepted, students must satisfy all VCU graduation requirements noted in the **graduation checklist**, including the following:
 - Completion of at least 25 percent of the semester-hour credits required for their bachelor's degree program at VCU
 - Completion of at least 30 of the last 45 semester-hour credits required for their bachelor's degree program at VCU
 - Completion of at least 45 upper-level credits (courses numbered 300 or higher)

No more than half (50 percent) of the courses applied to the major requirements can be transferred from another college. In other words, students may need to complete at least 50 percent of their major degree requirements at VCU.

General education requirements for transfer students

1. Transfer students who earn a Uniform Certificate of General Studies, a transfer-oriented associate degree (A.A., A.S., or A.A.& S.), an Associate of Fine Arts (A.F.A.) or a bachelor's degree from a regionally accredited institution prior to enrollment at VCU will be considered to have met all lower-division general education requirements with the exception of certain lower-level and upper-level degree program requirements that also apply to native students.
2. Transfer students from Virginia community colleges and Richard Bland College who have completed approved courses through the Virginia-based Passport or Uniform Certificate of General Studies, with a minimum grade of C, will be considered to have met the comparable general education requirements at VCU. This includes students who complete Passport or UCGS courses through dual enrollment at high school.
3. VCU provides students the option of reverse transfer of credit earned at VCU back to their former college. Virginia Community College System or Richard Bland College transfer students who are eligible for the awarding of an associate degree through reverse transfer of credits within one semester of enrollment at VCU will be considered to have met all lower-division general education requirements. Students must complete all other lower-level and upper-level degree program requirements that also apply to native students.
4. Since some transfer students may have followed VCU course or pathway recommendations based on prior general education requirements, all transfer students have the option of selecting the VCU general education requirements in effect at the date of the student's admission to their prior institution. This option will remain in effect for students matriculating at VCU through fall 2025.

Transfer students from Virginia community colleges who earn an Associate of Applied Science degree as part of an established transfer pathway (e.g., A.A.S. in Nursing to Bachelor of Science in Nursing or A.A.S. in Early Childhood Development to Bachelor of Science in Education) will be considered to have met all lower-division general education requirements with the exception of certain lower-level and upper-level degree program requirements that also apply to native students. A full list of established pathways with A.A.S. degrees, as well as pathways with other associate degrees, can be found online (<https://majormaps.vcu.edu/transfer/>). VCU academic units developing pathways with A.A.S. degrees will ensure that community college students complete a broad range of general education courses, including,

but not limited to, two semesters of English composition (e.g., ENG 111-112).

State policy on transfer agreement

VCU welcomes applications from Virginia community colleges and Richard Bland students who have earned the Associate in Arts, Associate in Science, Associate of Fine Arts, or Associate in Arts and Science degrees, or A.A.&S. or A.S. programs in general studies. In compliance with VCU's guaranteed admission agreements with the Virginia Community College System and Richard Bland College, students holding these degrees with a minimum cumulative GPA of 2.5 and a minimum grade of C in all transferable courses will be guaranteed general admission to the university. GAA students will have junior standing at VCU **as long as they have earned a minimum grade of C in all the transferable courses** and will be considered to have met all lower-division general education requirements with the exception of certain lower-level and upper-level degree program requirements that also apply to native students. (See below for more information about requirements for all students.) Students should closely follow the detailed course suggestions offered on the **Transfer Center** website for Virginia community colleges and Richard Bland College. By following the course recommendations of VCU's transfer maps (<https://transfer.vcu.edu/prospective/pathways/>) or guaranteed admission agreements (<https://transfer.vcu.edu/prospective/agreements/>), additional lower-division courses needed after transfer to VCU can be held to a minimum.

Additionally:

- Students must make proper application for admission to VCU.
- Only courses with minimum grades of C are transferable.
- Credits needed to meet major prerequisites will be based on the **course equivalency tables** or agreements resulting from program-to-program articulation agreements. (See the **list of agreements**.)
- Students will not be required to repeat courses that have been satisfactorily completed at a Virginia community college except in cases where special restrictions apply to all students.
- Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as native students.

For students with any of the associate degrees from a VCCS institution or Richard Bland College, VCU degree requirements in effect at the date of the student's admission to the VCCS or RBC associate degree program will be used in certifying the student for graduation if the student has not interrupted his or her associate degree more than two consecutive semesters (excluding summer sessions).

Students from VCCS institutions, Richard Bland College or other two-year institutions **who have not completed the college parallel A.A., A.F.A., A.S. or A.A.&S. degree** will have the exact designation of their status determined after an official evaluation of acceptable credits. This evaluation is determined by the equivalencies shown in the VCU **course equivalency tables** for Virginia community colleges and Richard Bland College that may be accepted, including not more than 50 percent in the major field of study. However, the applicant should realize that more than two additional years may be necessary to complete the degree requirements in certain curricula.

Requirements of native students which would apply to associate-degree holders after transfer to VCU are:

1. All bachelor's degree programs in the College of Humanities and Sciences, L. Douglas Wilder School of Government and Public Affairs, School of Social Work and VCU Life Sciences require competency through the elementary level of a foreign language (or American Sign Language); some majors require competency through the intermediate level.
2. The School of Social Work requires a 2.5 GPA for admission to upper-level courses. The School of Business requires a minimum GPA for admission to upper-level course work. Please contact the Office of Undergraduate Studies in the School of Business for the current minimum GPA required. The School of Mass Communications requires a 2.5 GPA for admission to upper-level work. The School of Education requires a minimum GPA of 2.8 for admission to the teacher preparation program. For students applying to majors in the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performance applicants are required.
3. The professional baccalaureate programs within the schools of Dentistry and Nursing and the College of Health Professions, and the doctoral programs in physical therapy and pharmacy have specific program-related lower-level requirements that must be completed to apply to and enter health sciences programs and to achieve success in the programs, if admitted.
4. The health, physical education and exercise science program has specific lower-level requirements related to state-approved program status, professional certification and entry into the practicum sequence. Specified science courses are prerequisite for entry into upper-level kinesiology and exercise science courses.
5. Transfer work from some occupational or technical programs is reviewed under specific conditions for the completion programs in clinical laboratory science and nursing for community college A.A.S. degree holders.
6. Students wishing to transfer to the College of Engineering must have a 3.0 GPA with no grades below a C. Also, minimum grades of B must be attained in mathematics, science or engineering courses to be considered for transfer. Transfer students from the VCCS will follow the **admission agreement for engineering**.
7. The A.A.&S. and A.S. programs in general studies are considered transfer degrees by VCU.
8. Detailed information about the **Virginia Community College/VCU and Richard Bland College/VCU transfer-equivalent courses** is available on the Transfer Center website.

Transfer application deadlines

Program-specific application deadlines for transfer students are available in the admissions and aid section of the VCU website (<https://vcu.edu/admissions/apply/transfer/>).

Evaluation of transfer credit

An evaluation of transferable credits for applicants to both Monroe Park Campus and MCV Campus programs is made by the Transfer Center (or appropriate program) after the accepted applicant's final transcript has been received by the Office of Admissions.

Accepted transfer credit contributes to hours earned and toward fulfillment of degree requirements at VCU. The grades of accepted transfer courses are recorded as TR on the student's VCU transcript, and hours attempted and quality points earned are not recorded. Accepted

transfer credits are not included in the transfer student's overall GPA at VCU. The GPA for fulfillment of VCU degree requirements is computed only from courses taken at VCU. The grades and quality points of transfer courses are evaluated in the computation determining graduation honors. Accepted quarter-hour credits recorded on the VCU transcript are converted to semester-hour credits.

Credits earned at other institutions carrying a grade of D are not accepted for transfer

Courses taken on the pass/fail or pass/no pass systems or courses taken for grades of satisfactory or unsatisfactory that receive earned credits and a satisfactory grade (or comparable passing grade) from the transfer institution receive equivalent semester credit. Transfer credits graded as pass/fail will not be included in the computation for determination of academic honors at VCU.

Degree candidates must complete 30 of the last 45 credit semester hours required for their bachelor's degree program at this institution.

Attainment of the college/school or department minimum GPA and any other standard requirements is required of all students, including, in the case of the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performing arts applicants. Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as currently enrolled VCU students.

Students who have earned the A.A., A.S. or A.A.&S. degree from a VCCS institution or Richard Bland College should refer to the articulation agreement information in this bulletin.

Students from VCCS institutions, Richard Bland College or other two-year institutions **who have not completed the college parallel A.A., A.S. or A.A.&S. degree** will have the exact designation of their status determined after an evaluation of acceptable credits. This evaluation is determined by the equivalencies shown in the VCU Transfer Guide for Virginia Community Colleges and Richard Bland College that may be accepted, including not more than 50 percent in the major field of study. However, the applicant should realize that more than two additional years may be necessary to complete the degree requirements in certain curricula.

Credits earned in community college occupational or technical programs will be judged on their own merits to determine their applicability toward VCU degree requirements. In addition, many accredited institutions offer correspondence courses, which may be considered for transfer credit.

Additional sources of academic credit

VCU awards advanced standing and credit, with qualifying scores or grades, for additional sources of academic credit. These additional sources include: Advanced Placement, International Baccalaureate, Cambridge Advanced, College Level Examination Program, military service credit recommended by the American Council on Education and the DANTES Subject Standardized Test Program. Students should consult the charts below for academic credit guidelines.

The awarding of credit is determined by the faculty. Faculty members from the relevant academic departments review the subject curricula, subject examinations, grade distributions and marking schemes provided by these examination agencies. After reviewing such materials, faculty members make informed judgments about what credit, if any, is to be awarded. Faculty members verify such judgments through feedback provided from student performance in more advanced courses at VCU. Once the faculty review is complete, the University Undergraduate

Curriculum Committee provides a secondary review and then publishes the results by means of transfer tables in the VCU Undergraduate Bulletin indicating the examination, test score, VCU course equivalent and number of credits awarded.

In order to be eligible for academic credit, new students must submit transcripts and/or scores to the VCU Transfer Center before the end of the first semester of enrollment. Official transcripts may be sent to VCU Transfer Center, Box 842532, Richmond, VA 23284-2532. For more information, contact the Transfer Center at (804) 827-1349.

Note: The Virginia Commonwealth University Board of Visitors gives the University Undergraduate Curriculum Committee the authority to review these sources of academic credit as needed. The UGCC will report substantial changes to the board for further approval. (Approved by VCU Board of Visitors, Nov. 10, 2011.)

Credit for Advanced Placement tests of the College Board

AP tests passed with scores of 3, 4 or 5 will, depending on the test, be considered for advanced standing and credit for the corresponding courses at VCU. The chart below provides information about the VCU equivalent credit for the various AP tests.

To ensure consistency, the VCU Transfer Center is the official credit notification point for AP credit for all university programs. Final determination of credit will be made after test results have been received and evaluated by the Transfer Center. Credits awarded are counted as credits earned toward the degree, but are not used in the computation of the student's VCU grade-point average.

For more information, contact the Transfer Center at (804) 827-1349.

VCU credit awarded for AP tests

AP examination	AP score	VCU equivalent	VCU credit
Art History	3,4,5	ARTH 103, ARTH 104	6
Art: Studio Art – Drawing	4,5	ARTF 139	1
Art: Studio Art – 2-D-Design	4,5	ARTF 139	1
Art: Studio Art – 3-D-Design	4,5	ARTF 139	1
Biology	3	BIOL 101, BIOZ 101	4
Biology	4	BIOL 152, BIOZ 152	4
Biology	5	BIOL 151, BIOZ 151, BIOL 152, BIOZ 152	8
Calculus AB	3,4,5	MATH 200	4
Calculus BC	3,4	MATH 200	4
Calculus BC	5	MATH 200, MATH 201	8
Chemistry	3,4	CHEM 101, CHEZ 101	4

Chemistry	5	CHEM 101, CHEZ 101, CHEM 102, CHEZ 102	8
Chinese Language & Culture	3	FRLG 101	3
Chinese Language & Culture	4,5	CHIN 201, CHIN 202	6
Computer Science A	3,4,5	CMSC 255	4
Computer Science Principles	3,4,5	CMSC 1XX	3
Economics – Macro	3,4,5	ECON 211	3
Economics – Micro	3,4,5	ECON 210	3
English Language and Composition or English Literature and Composition	3,4,5	UNIV 111	3
English Language and Composition and English Literature and Composition	3,4,5	UNIV 111, ENGL 215	6
Environmental Science	3,4,5	BIOL 103	4
European History	3,4,5	HIST 101, HIST 102	6
French, German, Spanish Language & Culture	3	FREN 202, GRMN 202, SPAN 202	3
French, German, Spanish Language & Culture	4	FREN 300, GRMN 300, SPAN 300	3
French, German, Spanish Language & Culture	5	FREN 300, GRMN 300, SPAN 300, FREN 301, GRMN 301, SPAN 301	6
Govt. & Politics: Comparative	3,4,5	POLI 109	3
Govt. & Politics: United States	3,4,5	POLI 103	3
Human Geography	3,4,5	URSP 102	3
Italian Language & Culture	3	ITAL 102	3
Italian Language & Culture	4	ITAL 201, ITAL 202	6

Italian Language & Culture	5	ITAL 202, ITAL 3XX	6
Japanese Language & Culture	3	FRLG 101	3
Japanese Language & Culture	4,5	FRLG 201, FRLG 202	6
Latin	3,4,5	LATN 201	3
Music Theory	3,4,5	MHIS 110	3
Physics 1	3,4,5	PHYS 201	4
Physics 2	3,4,5	PHYS 202	4
Physics C – Electricity & Magnetism	3,4,5	PHYS 208	5
Physics C – Mechanics	3,4,5	PHYS 207	5
Psychology	3,4,5	PSYC 101	4
Spanish Literature & Culture	3	SPAN 202	3
Spanish Literature & Culture	4	SPAN 330	3
Spanish Literature & Culture	5	SPAN 330, SPAN 331	6
Statistics	3	STAT 210	3
Statistics	4,5	STAT 210 or STAT 212	3
U.S. History	3,4,5	HIST 103, HIST 104	6
World History	3,4,5	HIST 1XX (History elective)	6
Research (Capstone)	4,5	UNIV 200	3
Seminar (Capstone)	3	UNIV 111	3
Seminar (Capstone)	4,5	Waive UNIV 111 and award credit for UNIV 112	3

Credit for International Baccalaureate diplomas and courses

IB Higher Level tests passed with scores of 3-7 and Standard Level tests passed with scores of 4-7 will, depending on the test, be considered for advanced standing and credit for the corresponding courses at VCU. The chart below provides information about the VCU equivalent credit for IB scores. Contact the VCU Transfer Center if an examination is not included in the chart.

To ensure consistency, the VCU Transfer Center is the official credit notification point for IB credit for all university programs. Final determination of credit will be made after test results have been received and evaluated by the Transfer Center. Credits awarded are counted as credits earned toward the degree, but are not used in the computation of the student's VCU grade-point average.

For more information, contact the Transfer Center at (804) 827-1349.

VCU credit awarded for IB diplomas and courses

IB examination	HL	SL	VCU equivalent	VCU credit
Arabic B, French B, German B, Italian B, Portuguese B, Russian B, Spanish B		4	ARBC 102, FREN 102, GRMN 102, ITAL 102, PORT 102, RUSS 102, SPAN 102	3
Arabic B, French B, German B, Italian B, Portuguese B, Russian B, Spanish B	4	5	ARBC 202, FREN 202, GRMN 202, ITAL 202, PORT 202, RUSS 202, SPAN 202	3
Arabic B, French B, German B, Italian B, Portuguese B, Russian B, Spanish B	5	6	ARBC 3XX, FREN 300, GRMN 300, ITAL 300, PORT 3XX, RUSS 3XX, SPAN 300	3
Arabic B, French B, German B, Italian B, Portuguese B, Russian B, Spanish B	6,7	7	ARBC 3XX, FREN 300-301 GRMN 300-301 ITAL 300 and ITAL 3XX, PORT 3XX, RUSS 3XX, SPAN 300-301	6
Biology	4,5	5,6	BIOL 101, BIOZ 101	4
Biology	6	7	BIOL 152, BIOZ 152	4
Biology	7		BIOL 151, BIOZ 151, BIOL 152, BIOZ 152	8
Business & Management	4,5,6,7	5,6,7	BUSN 201	3
Chemistry	4,5	5,6	CHEM 101, CHEZ 101	4
Chemistry	6,7	7	CHEM 101, CHEZ 101, CHEM 102, CHEZ 102	8
Classical Languages: Greek		4	FRLG 102	3
Classical Languages: Greek	4	5	FRLG 102	3
Classical Languages: Greek	5	6	FRLG 3XX	3

Classical Languages: Greek	6,7	7	FRLG 3XX	6
Classical Languages: Latin	3	4	LATN 101	3
Classical Languages: Latin	4	5	LATN 102	3
Classical Languages: Latin	5,6,7	6,7	LATN 202	3
Computer Science	4,5	5,6	CMSC 255	4
Computer Science	6,7	7	CMSC 255, CMSC 256	7
Economics	4,5,6,7	5,6,7	ECON 203	3
English B	4,5,6,7	5,6,7	UNIV 111	3
English Lang & Lit A	4,5,6,7	5,6,7	UNIV 111	3
English Literature A	4,5,6,7	5,6,7	ENGL 215 or UNIV 111	3
English Literature and Performance A		5,6,7	ENGL 291	3
Environmental Systems		5,6,7	URSP 203, URSZ 203	4
Film	4,5,6,7	5,6,7	ENGL 250	3
Further Mathematics	4,5,6		MATH 200, MATH 201	8
Further Mathematics	7		MATH 200, MATH 201, MATH 310	11
Geography	4,5,6,7	5,6,7	URSP 102	3
Global Politics	4,5,6,7	5,6,7	POLI 3XX	3
History		5,6,7	HIST 1XX (History elective)	6
History Americas	4,5,6,7		HIST 103, HIST 104	6
History Asia & Oceania	4,5,6,7		HIST 107, HIST 108	6
History Europe	4,5,6,7		HIST 101, HIST 102	6
Information Technology in Global Society			none	0
Japanese B, Korean B		4	FRLG 102	3
Japanese B, Korean B	4	5	FRLG 202	3
Japanese B, Korean B	5	6	FRLG 3XX	3

Japanese B, Korean B	6,7	7	FRLG 3XX	6
Mandarin Chinese B		4	CHIN 102	3
Mandarin Chinese B	4	5	CHIN 202	3
Mandarin Chinese B	5	6	CHIN 300	3
Mandarin Chinese B	6,7	7	CHIN 300 and CHIN 3XX	6
Mathematics		5,6,7	MATH 151	4
Mathematics	4,5,6		MATH 200	4
Mathematics	7		MATH 200, MATH 201	8
Mathematics: Analysis and Approaches		5,6,7	MATH 200	4
Mathematics: Analysis and Approaches	4,5,6		MATH 200	4
Mathematics: Applications and Interpretations		5,6,7	MATH 151	4
Mathematics: Applications and Interpretations	4,5,6		MATH 151	4
Mathematical Studies		4,5,6,7	MATH 141	4
Music	4,5,6,7	5,6,7	MHIS 105	3
Philosophy	4,5,6,7	5,6,7	PHIL 101	3
Physics	4,5	5,6	PHYS 201	4
Physics	6,7	7	PHYS 201, PHYS 202	8
Psychology	4,5,6,7	5,6,7	PSYC 101	4
Social & Cultural Anthropology	4,5,6,7	5,6,7	ANTH 103	3
Theatre Arts	4,5,6,7	5,6,7	THEA 107	3
Theory of Knowledge	4,5,6,7	5,6,7	UNIV 1XX	3
Visual Arts	4,5,6,7	5,6,7	ARTF 139	1
World Religions		5,6,7	RELS 108	3

Credit for Cambridge International Examinations

The university may grant credit for Cambridge International Examinations comprising levels Advanced and Advanced Subsidiary offered through the University of Cambridge in England. These courses and examinations are administered through registered CIE Centers in public high schools throughout the United States. A-level syllabuses and exams cover approximately two years of college-level curriculum in a subject and the AS-level syllabus and exam covers the first year of the two-year A-level curriculum.

Cambridge tests passed with a minimum final grades of E will, depending on the test, be considered for advanced standing and credit for the corresponding courses at VCU. The applicability of such credit toward the student's degree program is interpreted by the department or school in which the student seeks a degree.

To ensure consistency, the VCU Transfer Center is the official credit notification point for Cambridge A/AS credit for all university programs. Final determination of credit will be made after test results have been received and evaluated by the Transfer Center. Credits awarded are counted as credits earned toward the degree, but are not used in the computation of the student's VCU grade-point average.

Students requesting evaluation of their Cambridge credits are to request an official copy of their transcript from the CIE coordinators at the student's specific high school. Official transcripts may be sent to VCU Transfer Center, Box 842532, Richmond, VA 23284-2532.

The chart below provides information about the VCU equivalent for various Cambridge examinations. Contact the Transfer Center if an examination is not included in the chart.

For more information regarding Cambridge International Examinations, please contact the VCU Transfer Center at (804) 827-1349.

VCU credit awarded for Cambridge International Examinations

Cambridge exam	A-level VCU equivalent	AS-level VCU equivalent	VCU credit
Accounting	ACCT 203	ACCT 203	3
Biology	BIOL 101/ BIOZ 101	BIOL 101/ BIOZ 101	4
Business	BUSN 201	BUSN 201	3
Chemistry	CHEM 101/ CHEZ 101	CHEM 101/ CHEZ 101	4
English	¹	UNIV 111	3
English literature	ENGL 215	ENGL 215	3
Environmental management	¹	ENVS 101	3
French	FREN 202	FREN 202	3
German	GRMN 202	GRMN 202	3
Spanish	SPAN 202	SPAN 202	3
Mathematics	MATH 200	MATH 200	4
Physics	PHYS 201	PHYS 101/ PHYZ 101	4
Divinity	RELS 327/ HIST 335	²	3
Psychology	PSYC 101	PSYC 101	4
Music	MHIS 1XX	MHIS 1XX	3
Computing	CMSC 101	CMSC 101	3
Economics	ECON 210-211 (6 credits)	ECON 203	3
Art and design	ARTS 1XX	ARTS 1XX	3

¹Class/exam exclusively offered at AS-level.

²Class/exam exclusively offered at A-level.

College Level Examination Program

The College Level Examination Program is designed to allow people who have gained knowledge outside the classroom to take examinations and receive college credit for what they have learned. CLEP scores of 50 or higher will, depending on the test, be considered for advanced standing and credit for the corresponding courses at VCU. The chart below provides information about the VCU equivalent credit for CLEP scores. Contact the VCU Transfer Center if an examination is not included in the chart.

To ensure consistency, the VCU Transfer Center is the official credit notification point for CLEP credit for all university programs. Final determination of credit will be made after test results have been received and evaluated by the Transfer Center. Credits awarded are counted as credits earned toward the degree, but are not used in the computation of the student's VCU grade-point average.

Procedures for new students

Students who took CLEP examinations prior to enrollment at VCU must submit transcripts and/or score sheets to the VCU Transfer Center, 900 Park Ave., Box 842532, Richmond, VA 23284-2532.

Procedures for continuing VCU students

1. Students should obtain CLEP approval forms, information about CLEP general and/or subject examinations, VCU course equivalency information, optional essay requirements and CLEP applications from the Testing Center in Hibbs Hall, First Floor, Box 842500, Richmond, VA 23284-2500; (804) 827-8108.
2. Students should discuss the examination(s) to be taken with an adviser.
3. Students should schedule a CLEP exam at the Testing Center or at another site of their choosing. Proctoring fees vary by site and students are responsible for the proctor and exam fees. The exam fee is paid on the CLEP website.

Regulations for continuing VCU students

1. CLEP credit is officially awarded only to students who are fully accepted into a VCU degree program.
2. A student may not attempt a subject or general examination if it duplicates in part, or full, any VCU course or combination of courses that the student has already completed or enrolled in for credit. This includes courses for which a student enrolls but subsequently withdraws and receives a grade of W.
3. If a student has earned CLEP subject examination credit, the student may not take a VCU course for credit that would duplicate the CLEP credits already earned.
4. A maximum of 54 semester credits can be earned through CLEP examinations.

The chart below provides information about the VCU equivalent for various CLEP examinations. Contact the VCU Transfer Center if an examination is not included in the chart.

For more information regarding CLEP, please contact the VCU Transfer Center at (804) 827-1349.

VCU credit awarded for subject tests taken through the CLEP¹

Subject exam	Score	VCU equivalent	VCU credits
French (2 semesters)	50	FREN 101- FREN 102	6
French (4 semesters)	62	FREN 101- FREN 102, FREN 201- FREN 202	12
German (2 semesters)	50	GRMN 101- GRMN 102	6
German (4 semesters)	63	GRMN 101- GRMN 102, GRMN 201- GRMN 202	12
Spanish (2 semesters)	50	SPAN 101- SPAN 102	6
Spanish (4 semesters)	66	SPAN 101- SPAN 102, SPAN 201- SPAN 202	12
Spanish with writing	63	SPAN 201	3
American government	50	POLI 103	3
Educational psychology	50	PSYC 305	3
History of the U.S. 1	50	HIST 103	3
History of the U.S. 2	50	HIST 104	3
Human growth & development	50	EDUS 301	3
Intro to psychology	50	PSYC 101	3
Intro to sociology	50	SOCY 101	3
Western civilization 1	50	HIST 101	3
Western civilization 2	50	HIST 102	3
College algebra	50	MATH 141	4
Calculus	50	MATH 200	3
Chemistry	50	CHEM 101- CHEM 102	6
College mathematics	50	MATH 131	3
Pre-calculus	50	MATH 151	3
General biology	50	BIOL 101 OR BIOL 151	3
General biology	70	BIOL 151- BIOL 152	6
Financial accounting	50	ACCT 203	3
Info systems & computer apps	50	INFO 360	3

Intro to business law	50	BUSN 323	3
Principles of marketing	50	MKTG 301	3
Microeconomics	50	ECON 210	3
Macroeconomics	50	ECON 211	3
College composition	50	UNIV 111	3

¹Decisions regarding VCU equivalents were made in consultation with the VCU departments.

Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the university provides its students the opportunity to accelerate their education through credit by examination. The following outline describes conditions under which credit by examination may be given and the procedure for doing so.

1. With the approval of the dean, each department or program shall:
 - a. Determine which, if any, courses shall be available for credit by examination. The student should check with the department offering course work in the area in which he or she wishes to take credit by examination for a list of the courses so designated.
 - b. Determine the types of examinations, standards of evaluation and evaluators for the courses so designated.
 - c. Determine the qualifications for students to be eligible to take the examinations.
2. The examinations, if available, may be taken by any enrolled student during the fall and spring semesters and during the summer session.
3. The student wishing to take credit by examination must meet the following requirements:
 - a. Not have received a grade listed in this bulletin, including AU or W for the course for which credit by examination is sought. Also, the student should not have been granted transfer credit for a similar course taken elsewhere.
 - b. Be a currently enrolled student as certified by the examining department.
 - c. Meet departmental and school eligibility requirements as evidenced by the written approval of the chair of the examining department.
4. After consultation with the major adviser and within the first four weeks of a semester or the first week of a summer session, the student must complete the Credit by Examination Approval Form with the department chair. The form, available from the department, should be left with the chair when it is completed.
5. Within two weeks, the student is notified by the dean's office of the time and place of examination.
6. After notification, but before taking the exam, the student must pay the university cashier the fee established by VCU for each credit being sought. As verification of payment, the student presents the receipt to the department chair before the examination is taken.
7. After the examination is taken, the results and the examination are sent to the dean's office, which notifies the student of the results. If the student passes the examination, the course title, credits earned and the grade CR are recorded on the student's permanent academic record. Credits so earned are applied toward the graduation

requirement for total credits. However, these credits are not included in the computation of the student's GPA.

Military credit

The university may grant credit for formal military service training courses offered by the various branches of the U.S. armed forces as well as for acceptable scores on standardized tests. VCU also awards military credit for active service in the military. The guidelines for granting such credits include:

1. Service members and veterans of the U.S. Army, U.S. Navy, U.S. Marine Corps and the U.S. Coast Guard receive the **Joint Services Transcript** as a record of their military training. The JST provides credit recommendations for military training through the American Council on Education evaluation process. VCU recognizes the ACE recommendations from the JST and awards transfer credit for military training courses into college credit as determined by VCU faculty if a comparable course is offered at VCU. Examples of the type of transfer credit awarded for military training are listed in the table below.
2. Service members and veterans of the U.S. Air Force receive a transcript from Air University (formerly the **Community College of the Air Force**) with college credits awarded for military training. VCU awards transfer credit from the Air University transcript as transfer credits according to VCU's transfer evaluation guidelines.
3. VCU awards credits based on acceptable scores earned on subject tests taken through Defense Activity for Non-traditional Education Support, a college-credit-by-exam-agency. The DANTES Subject Standardized Tests program is an extensive series of examinations in college subject areas that are comparable to the final or end-of-course examinations in undergraduate courses. The table below lists the amount and type of credit awarded for acceptable scores as determined by VCU faculty evaluation.
4. VCU awards credits based on acceptable scores earned on subject tests taken through the College Level Examination Program, a college-credit-by-exam program. The table below lists the amount and type of credit awarded for acceptable scores as determined by VCU faculty evaluation.
5. **Students who have completed at least one year of U.S. military service may be eligible for the award of 1-6 credits of military science electives (MILS).** To request credit, military applicants are required to provide an official JST or DD-214. The amount of credit is based on time in service (i.e., consecutive months of active duty in the armed forces, terminated under honorable conditions).
 - One year: 1 credit for MILS 2XX
 - Two years: 2 credits for MILS 2XX
 - Three years: 3 credits for MILS 2XX
 - Four years: 3 credits for MILS 2XX and 1 credit for MILS 3XX
 - Five years: 3 credits for MILS 2XX and 2 credits for MILS 3XX

- Six or more years: 3 credits for MILS 2XX and 3 credits for MILS 3XX

All credit given for years of service will be awarded to students not seeking a commission into the Army upon graduation. Students who pursue a commission in the Army through the VCU ROTC program will need to follow the United States Army Cadet Command procedures for completing ROTC requirements. These students will not be allowed to apply years of service toward MILS course credit.

Military credit will count toward the total credits needed for the degree but the applicability of such military credit toward the curricular requirements of the student's degree program is interpreted by the department or school in which the student seeks a degree. Credits accepted are counted as credits earned toward the degree, but are not used in the computation of the student's GPA. Students should consult the VCU Transfer Center for further details about the procedures for awarding military credit.

Credit is accepted directly from each of the above agencies. Service members and veterans of the U.S. Army, U.S. Navy, U.S. Marine Corps and the U.S. Coast Guard may request their military transcripts be sent directly to VCU from the JST system online (<https://jst.doded.mil/smart/welcome.do>). Service members and veterans of the U.S. Air Force may request transcripts be sent directly to VCU from Air University.

Military students may request their test score sheets for CLEP and DSST subject exams from the DANTES website (<https://www.dantes.doded.mil/EducationPrograms/take-tests-get-transcripts/gettranscript.html>).

Transcripts and/or score sheets may be sent to VCU Transfer Center, 900 Park Ave., Box 842532, Richmond, VA 23284-2532.

Examples of transfer credits awarded for military service training courses (as reported on JSTs) based on ACE recommendations

(Additional credit may be awarded on a case-by-case basis.¹)

Course	Recommended credit	VCU equivalent	Credit
Physical conditioning/fitness	1-3	HPEX 1XX	1-3
First aid	1-3	HPEX 1XX	1-3
Military science/leadership	1-3	MILS 101	1-3
Personal/community health	1-3	HPEX 1XX	1-3
Oral communications	1-3	SPCH 121	1-3
Personnel supervision/management	1-3	MGMT 1XX	1-3
Basic math	1-3	MATH 1XX	1-3
Computer technology	1-3	INFO 1XX	1-3
Technical writing	1-3	ENGL 1XX	1-3

Human resources 1-3 management	MGMT 1XX	1-3
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¹Decisions regarding VCU equivalents were made in consultation with the VCU departments.

VCU credit awarded for DSST subject exams through DANTES¹

DSST exam	Score	VCU equivalent	VCU credit
Technical writing		No equivalent	0
Intro to computing		No equivalent	0
Contemporary Western Europe, 1946-1990	48 or 400	HIST 1XX	3
Intro to modern Middle East	44 or 400	HIST 1XX	3
Human/cultural geography	48 or 400	URSP 102	3
Ethics in America	46 or 400	PHIL 2XX	3
Criminal justice		No equivalent	0
Fundamentals of college algebra		No equivalent	0
General anthropology	47 or 400	ANTH 103	3
Intro to law enforcement		No equivalent	0
Lifespan development psychology	46 or 400	PSYC 304	3
Physical geology	46 or 400	ENVS 105	3
Principles of physical science I	47 or 400	PHYS 101	3
Principles of statistics	48 or 400	STAT 208	3
Management information systems	46 or 400	INFO 360	3
Human resource management	46 or 400	MGMT 2XX	3
Introduction to business	46 or 400	BUSN 201	3
World religions	46 or 400	RELS 108	3

¹Decisions regarding VCU equivalents were made in consultation with the VCU departments.

VCU credit awarded for subject tests taken through the CLEP¹

Subject exam	Score	VCU equivalent	VCU credits
French (2 semesters)	50	FREN 101- FREN 102	6
French (4 semesters)	62	FREN 101- FREN 102, FREN 201- FREN 202	12

German (2 semesters)	50	GRMN 101-GRMN 102	6
German (4 semesters)	63	GRMN 101-GRMN 102, GRMN 201-GRMN 202	12
Spanish (2 semesters)	50	SPAN 101-SPAN 102	6
Spanish (4 semesters)	66	SPAN 101-SPAN 102, SPAN 201-SPAN 202	12
American government	50	POLI 103	3
Educational psychology	50	PSYC 305	3
History of the U.S. 1	50	HIST 103	3
History of the U.S. 2	50	HIST 104	3
Human growth & development	50	EDUS 301	3
Intro to psychology	50	PSYC 101	3
Intro to sociology	50	SOCY 101	3
Western civilization 1	50	HIST 101	3
Western civilization 2	50	HIST 102	3
College algebra	50	MATH 141	4
Calculus	50	MATH 200	3
Chemistry	50	CHEM 101-CHEM 102	6
College mathematics	50	MATH 131	3
Pre-calculus	50	MATH 151	3
General biology	50	BIOL 101 OR BIOL 151	3
General biology	70	BIOL 151-BIOL 152	6
Financial accounting	50	ACCT 203	3
Info systems & computer apps	50	INFO 360	3
Intro to business law	50	BUSN 323	3
Principles of marketing	50	MKTG 301	3
Microeconomics	50	ECON 210	3
Macroeconomics	50	ECON 211	3
College composition	50	UNIV 111	3

¹Decisions regarding VCU equivalents were made in consultation with the VCU departments.

Credits earned through the International Student Exchange Program

Credits earned by a VCU student through ISEP appear on the student's transcript, but are not included in the computation of the student's cumulative GPA. See the Education Abroad (p. 616) section of this bulletin. This policy became effective July 1990.

Credits for dual-enrollment courses

Qualified students who have taken college-level work while still enrolled in a secondary school may receive academic credit. Courses taken as dual enrollment will be treated as VCU courses or transfer credits according to the evaluation guidelines (p. 37).

Approved by VCU Board of Visitors, Nov. 10, 2011. **The Virginia Commonwealth University Board of Visitors gives the University Undergraduate Curriculum Committee the authority to review these sources of academic credit as needed. The UUC will report substantial changes to the board for further approval.**

Senior Citizens Higher Education Program

A senior citizen is any person, who, before the beginning of any semester in which they claim entitlement to the senior citizen educational benefit is 60 years of age and has had legal domicile in the commonwealth of Virginia for one year. The senior citizen may take courses without paying tuition or mandatory fees, except for course-/program-related fees, under certain conditions. The tuition-free policy does not apply to the cost of private music lessons, special course and materials fees (e.g., textbooks, laboratory and art fees), or program-specific tuition and fees. Additionally, a waiver may not be submitted for noncredit courses offered through third-party partnerships. The Senior Citizen Tuition Waiver form must be submitted for each semester in which the senior citizen enrolls in classes.

If the senior citizen had a taxable income of not more than \$23,850 for Virginia income tax purposes for the year preceding the year in which enrollment is sought, the individual may take a course for academic credit. The senior citizen will be required to submit tax documentation verifying income. If the person's taxable income exceeded \$23,850, the individual may only audit the course for free.

No limit is placed on the number of terms, quarters or semesters in which a senior citizen who is not enrolled for academic credit may register for courses, but the individual can take no more than three noncredit courses in any one semester. There will be no restriction on the number of courses that may be taken for credit in any semester, or on the number of semesters in which an eligible senior citizen may take courses for credit.

The two additional conditions listed below shall be met before a senior citizen may take a course under the provisions of this program:

1. The senior citizen shall meet the appropriate admission requirements of the institution in which the student plans to enroll.
2. The senior citizen may be admitted to a course only on a space-available basis after all tuition-paying students have been accommodated, unless the senior citizen has completed 75 percent of the degree requirements necessary for a degree. At such time in the senior citizen's program, the senior citizen can enroll in courses at the same time as other tuition-paying students.

Enrichment and acceleration opportunities

Special honors programs and courses are offered at the university. Refer to the appropriate school sections of this bulletin for further information. Interdisciplinary honors courses designed for superior freshmen in any program are also available.

Early admission program

The early admission program permits exceptional students the opportunity to enroll in undergraduate programs at the university as freshmen after the completion of the junior year of high school. The program is available to students who demonstrate readiness for college by their high school record, SAT results and in an interview with an admissions counselor. Applicants for the early admission program must present a minimum GPA of 3.5 and minimum combined SAT scores of 1180 (on the critical reading and math sections of the test only) or demonstrate exceptional talent in their intended area of study. Additionally, early admission applicants must be within two of the required units for graduation and have the written approval of the high school principal (or designee) to seek admission to college as full-time undergraduate students. Candidates interested in this program should contact the Office of Admissions for further information.

Advanced scholars program

Qualified high school students from Richmond and surrounding area high schools may be permitted to carry college-level courses at the university while concurrently completing the high school diploma. Students may select courses of interest and, upon successful completion of the courses, may receive college credit. However, courses selected should not be available in the high school curriculum.

Candidates must be nominated and approved by the secondary school principal. A maximum of 100 candidates are accepted each semester and candidates may enroll in no more than two courses per semester.

As a guide to secondary schools, the following criteria for selection are considered.

1. Each candidate must be nominated and approved by the secondary school principal.
2. Each candidate must have achieved a total of 1180 points on the SAT or 118 on the PSAT, and a minimum GPA of 3.2 on a 4.0 scale
3. Each candidate must be a high school junior or senior.
4. The desired courses to be studied must be available and appropriate.
5. All parties should emphasize that tuition is charged for courses taken as an advanced scholar.

Notification forms and other information may be obtained from the Office of Admissions, Virginia Commonwealth University, Box 842526, Richmond, VA 23284-2526 or (804) 828-1222.

Teacher cadet program

The teacher cadet program is a highly selective program for students who have expressed an interest in pursuing teaching as a career. The program follows a rigorous curriculum that is standardized throughout Virginia public schools. Qualified high school students from Richmond and surrounding area may be permitted to take EDUS 101 as a college-

level course at the university while concurrently completing the high school diploma.

Participating students must meet the following requirements established by the Virginia Department of Education:

- Maintain, at minimum, a 2.7 GPA or its equivalent
- Submit three satisfactory teacher recommendations
- Submit an application that includes a brief essay

In addition, students must be approved by the secondary school principal and, if the student is under the age of 18, must submit documentation of parental approval.

Students successfully completing the course with a grade of B will receive three undergraduate credits that can be used toward electives in the VCU School of Education's five-year extended teacher preparation program. For more information about the teacher cadet program, contact the VCU School of Education at (804) 827-2670 or soessc@vcu.edu.

Orientation

The university provides orientation to all new undergraduate students. Orientation programs are designed to increase the students' awareness of the university's programs, services and facilities and to provide opportunities for faculty advising and registration for their first semester of classes.

After acceptance to the university, students are sent detailed information regarding the orientation program. Included in the summer orientation program is a program for the parents of freshman students that is especially helpful to their understanding of the university and its future relationship to their sons and daughters.

For additional information about orientation, visit the website of the Office of New Student and Family Programs (<http://nsfp.vcu.edu/>). For information regarding orientation to MCV Campus programs, contact the individual department.

Readmission guidelines

Readmission is subject to individual degree program requirements. Contact the program department or consult the appropriate program portion of this bulletin for specific information.

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for that semester. A student who does not attend VCU for three or more successive fall and spring semesters (excluding summer sessions), must submit an application for readmission to the Office of Admissions. See the undergraduate readmission/continuous enrollment chart below for details on readmission and continuous enrollment. Students who have attended another institution and wish to return after the allowable absence period or who have been suspended since their last enrollment at VCU also must apply for readmission. This application must be made before the application submission date for the semester in which the student plans to return.

Students who wish to return to VCU after enrolling at another institution are considered readmission applicants and should submit official transcripts from the colleges attended since last enrolled at VCU. Students who attend another institution during periods of suspension from VCU are considered readmitted students for admission purposes. If readmitted, they assume their VCU GPA and academic status; any course

work taken at another institution during the suspension will be evaluated according to regular procedures.

Readmission applicants who wish to change their majors may have to meet additional requirements for some programs. Applicants to the School of the Arts must submit supplemental materials as described in the application for undergraduate admission.

Students may apply for readmission to VCU for the semester following completion of the first suspension period (two semesters, one of which may be summer). Under certain circumstances, students may be considered for readmission from the second and final suspension after a period of five years. Students on second suspension who wish to return before the required completion of the five-year suspension period must appeal their readmission to the Academic Regulations Appeals Committee. Students should contact the dean's office of the school or college from which they were suspended to initiate this process. For more information on suspension policies, refer to the section on continuance in academic programs (p. 24).

Applicants who have been suspended from the university for nonacademic or disciplinary reasons are referred to the Office of the Vice Provost for Student Affairs for pre-admission clearance.

Undergraduate readmission/continuous enrollment chart

A student who does not attend VCU for three or more successive fall and spring semesters, excluding summer session, must submit an application for readmission to the Office of Admissions. Students who have attended another institution and wish to return after the allowable absence period or who have been suspended since their last enrollment at VCU also must apply for readmission.

The semester appearing in the "Must return semester" column associated with the term in the "Last enrolled semester" column denotes when a student must return to remain in continuous enrollment. If an undergraduate student wishes to return after the "must return semester," they are required to apply for readmission.

Summers are not included in the calculation of the allowable absence period. If a student chooses to return during the summer, the calculation of the allowable absence period is reset and begins anew with the following fall semester, thus summers are included under the "Last Enrolled Semester" column.

Last enrolled semester	Must return semester
Spring 2018	Fall 2019
Summer 2018	Fall 2019
Fall 2018	Spring 2020
Spring 2019	Fall 2020
Summer 2019	Fall 2020
Fall 2019	Spring 2021
Spring 2020	Fall 2021
Summer 2020	Fall 2021
Fall 2020	Spring 2022
Spring 2021	Fall 2022
Summer 2021	Fall 2022
Fall 2021	Spring 2023
Spring 2022	Fall 2023
Summer 2022	Fall 2023

Fall 2022	Spring 2024
Spring 2023	Fall 2024
Summer 2023	Fall 2024
Fall 2023	Spring 2025
Spring 2024	Fall 2025
Summer 2024	Fall 2025
Fall 2024	Spring 2026
Spring 2025	Fall 2026
Summer 2025	Fall 2026
Fall 2025	Spring 2027
Spring 2026	Fall 2027
Summer 2026	Fall 2027
Fall 2026	Spring 2028
Spring 2027	Fall 2028
Summer 2027	Fall 2028
Fall 2027	Spring 2029
Spring 2028	Fall 2029
Summer 2028	Fall 2029
Fall 2028	Spring 2030
Spring 2029	Fall 2030
Summer 2029	Fall 2030
Fall 2029	Spring 2031
Spring 2030	Fall 2031
Summer 2030	Fall 2031
Fall 2030	Spring 2032
Spring 2031	Fall 2032
Summer 2031	Fall 2032

The Honors College and guaranteed admission

For detailed information on admission to The Honors College and the Guaranteed Admission Program, see The Honors College (p. 621) section of this bulletin.

Tuition, fees and expenses

Student Accounting Department
1015 Floyd Avenue
Box 843036
Richmond, Virginia 23284-3036
Phone: (804) 828-2228
Email: stuacctg@vcu.edu
accounting.vcu.edu (<http://accounting.vcu.edu/>)

Danielle L. Mitchell
Director

The Student Accounting Department is located at 1015 Floyd Avenue. The department is responsible for the assessment, billing and collection of tuition, housing and dining charges and other university fees. The department also processes scholarships from outside VCU, bills third parties for student charges and issues refunds to eligible students.

For more information regarding policies and procedures, refer to the Student Accounting website (<http://accounting.vcu.edu/>).

Fees and expenses

Students must pay all applicable tuition, fees, room and meal plans when due, as described in this section. Students are notified at their official VCU email address when their bills are available on the billing and payment site. No paper bills are sent to enrolled students. Tuition and fees for preregistered students, along with charges for housing and dining plans where applicable, are due by the official start of each semester. After the registration period all other students are sent a notification at their official VCU email address when their electronic bill has been issued and should pay by the payment due date indicated on the electronic invoice. Students who fail to pay these charges on time may be assessed a registration/transcript hold and/or a late payment fee. The university reserves the right to revise or alter all tuition and fees, regulations pertaining to student fees, and fee collection procedures at any time. In addition to expenses billed by the university, students should make allowances for books, clothing, supplies, travel and other out-of-pocket costs when figuring their total yearly expenses at the university.

Student financial responsibility

Students who enroll are responsible for:

- Full payment of tuition and fees generated from their registration
- Full payment of all charges for housing and dining services and other applicable miscellaneous charges
- Keeping a current mailing address on file with Enrollment Services (Refunds and tax forms are not issued to students with inactive mailing addresses.)
- Establishing an official VCU email address and reading their email on a regular basis, since email will be used to notify students when their invoices are available in the payment and billing site

Note: Paper bills are not sent to enrolled students. Failure to acknowledge and review the electronic invoice does not relieve responsibility for timely payments. Other important notifications are also sent to the official VCU email address.

Tuition and fees

Tuition and fees are categorized and described on the Student Accounting website at accounting.vcu.edu/tuition (<http://www.accounting.vcu.edu/tuition/>). The university reserves the right to revise or alter all fees, regulations pertaining to student fees, and fee collection procedures at any time.

Outstanding charges

A student who fails to remit payments when due may be assessed a late payment fee and is denied registration for future classes until he or she has paid all amounts owed to the university. Students with balances owed the university are not issued degrees, or official transcripts, until all charges are paid in full.

Student accounts with balances owed the university are referred to the collection unit. Pursuant to Section 2.2-4805 et. seq., of the Code of Virginia, and in accordance with rules and regulations promulgated by the state comptroller and attorney general of the commonwealth of Virginia, VCU will charge interest, costs and fees on all accounts past due. An additional fee of 25 percent of the outstanding balance will be assessed immediately upon referral to the VCU Collection Unit.

Students are reminded that they are ultimately responsible for any unpaid balance on their account as a result of the Office of Financial Aid or their sponsor canceling or reducing the award. The student remains financially

responsible for the charges deferred on the basis of any financial aid if later the student is determined ineligible. Students are also responsible for ensuring that all necessary actions have been taken to receive their financial aid awards. Also see the federal financial aid refund policy.

Any communication disputing an amount owed, including an instrument tendered as full satisfaction of a debt, must be submitted to the Director of Student Accounting, Student Accounting Department, Box 843036, Richmond, VA 23284.

VCU participates in the Virginia Set-off Debt Collection Act of 1981. Under the provisions of this act, a Virginia individual income tax refund is subject to the university's claim for unpaid balances of tuition and fees.

Dishonored payment items

A charge of \$50 will be levied for all dishonored payment items. Returned payment items include returned checks and dishonored credit or debit card payments. A student who pays a past-due balance with a dishonored payment item may be subject to having his or her current and/or future registration cancelled.

Tuition determination and student classification

Tuition is determined by the number of credit hours a student is taking, the student's residency/domiciliary classification, course of study and classification level. For in-state tuition benefits, the student must comply with the Code of Virginia (<https://law.lis.virginia.gov/vacode/title23.1/chapter5/>) regulations relative to in-state tuition and reduced rate tuition eligibility.

All applicants to VCU who wish to be considered for in-state tuition rates as Virginia residents must submit the application for Virginia in-state tuition rates, which is part of the application for undergraduate admission. The residency determination of the applicant is conveyed at the time of admission.

New and continuing students initially classified as non-Virginians for tuition purposes may request a review of the initial residency/domiciliary determination by completing an application for change of domicile available from the Office of Records and Registration (online). The student must present clear and convincing evidence that they are not residing in the state primarily to attend school. The application deadline is 30 days prior to the start of the semester, and it is the responsibility of the student to establish or to file an appeal to change their residency classification prior to the start of classes for the semester under consideration. In accordance with the Code of Virginia, applications received after the start of the semester must be considered for the next semester. Submit completed applications with documentation to the university domicile appeals coordinator. Processing may require four to six weeks; therefore, it is strongly recommended that applications be submitted earlier than the stated deadline.

The university's service to students is limited to assuring that they understand the procedures for appealing and that they have access to information about the relevant sections of the Code of Virginia. VCU provides information about the steps of the process and access to the applicable sections of the statute and the associated guidelines. The university also provides qualified staff to review the appeals and make decisions based on the information students provide. The office cannot provide advice to students as to how to present their case for review; staff members cannot become the student's advocate since their office must make the decision.

Students approved for a change to in-state status for tuition purposes are notified by mail with copies of their approval letters sent to the Office of Financial Aid and the Student Accounting Department. Students denied this status are also notified by mail. The denial letter informs the student of procedures for appeal of this decision, to include filing an appeal with the University Residency Appeals Committee. Students who submit fraudulent applications, falsify documentation or conceal information will be subject to reclassification, payment of all nonresident fees owed and university discipline.

Please note that a student with in-state status for tuition purposes who exceeds 125 percent of the credit hours needed to complete his program will be assessed a tuition surcharge.

Tuition and fees charges

Students accepted into an undergraduate degree program who accept the offer of admission must pay a nonrefundable tuition deposit (amount of deposit may vary according to program). This deposit is credited toward the tuition charge for the first semester. If the student accepts the offer, pays the fee, then decides not to enroll for the intended semester, the deposit is forfeited.

Undergraduate students registered for 12 or more credits are considered full time. Students registered for fewer than 15 credit hours are charged a per-credit-hour tuition rate. Tuition for additional credits is assessed at a reduced per-credit-hour-rate for the additional credits (15 and more). Credits one to 15 are assessed at the full, per-credit-hour rate. Mandatory fees are charged at a per-credit-hour rate and capped at 12 credit hours. Undergraduate students registered for fewer than 12 credits are considered part-time. Part-time students are charged a per-credit-hour rate based on their classification and program.

Intersession and J-term courses are billed on the spring semester invoice, but are computed separately from the spring semester charges. The cost of an intersession course is the standard per-credit-hour tuition with no fees based on the student's classification and program.

Nondegree-seeking students who hold bachelor's degrees are classified as DHG (degree-holder graduate) if they enroll in one or more graduate courses. DHG students registered for fewer than nine credit hours are charged a graduate per-credit-hour rate. If they enroll in nine or more credits, they are charged at the full-time graduate rate. Nondegree-seeking students who hold undergraduate degrees are classified as DHU (degree-holder undergraduate) if they enroll in all undergraduate courses. DHU students registered for fewer than 15 credit hours are charged tuition at a per-credit-hour rate. If registered for 15 or more credit hours, tuition for the additional credits (15 and more) will be assessed at a reduced per-credit-hour rate.

Courses offered through the Office of Continuing and Professional Education are assessed tuition and fee charges in addition to the standard tuition and fee rates.

If students make changes to their course enrollment by the end of the add/drop week, their classification and charges change in accordance with these guidelines.

University fee

This fee is used by the university to support student facilities, campus development, intercollegiate athletics and other programs. Full-time students pay a flat-rate university fee each semester. Part-time students pay this fee on a per-credit basis.

Student activity fee

This fee supports educational, social, cultural and other student activities for undergraduate, graduate and professional students. These activities include the Student Government Association, sports clubs, student organizations and publications. Full-time Monroe Park Campus students pay a flat rate and part-time students pay a per-credit-hour rate; MCV Campus students pay a flat rate based on part-time or full-time enrollment.

Student health fee

All full-time students on both campuses must pay the student health fee. Part-time students may participate in the University Student Health Services on an elective basis by paying the student health fee. USHS offers unlimited office visits for acute and chronic ailments, after-hours phone advice for an urgent medical problem and most laboratory tests associated with acute illnesses ordered by the USHS staff, among other services. The fee does not cover accidental injury, emergency room visits or hospitalization. More specific information as to what is covered and not covered by the fee is available on the USHS website (<http://www.students.vcu.edu/health/services/>).

Technology fee

The technology fee is charged to all undergraduate, graduate and professional students in all programs. Full-time students pay a flat rate. Part-time students pay a per-credit-hour rate. The fee is used to fund improved access and assistance with information technology.

Library fee

The library fee is charged to all undergraduate, graduate and professional students in all programs. Full-time students pay a flat rate; part-time students pay a per-credit-hour rate. Fee revenues are used to sustain library spaces, services, personnel and operations that advance student success across both campuses and online.

Capital outlay fee

The capital outlay fee is charged to all full-time and part-time non-Virginia resident, on-campus students. Full-time students pay a flat rate. Part-time students pay a per-credit-hour rate. The fee is mandated by the General Assembly with revenues used to reimburse the state for debt service costs attributable to nonresident students related to financing of buildings and equipment.

Campus Learning Center learning support fee

The CLC learning support fee is charged to all freshmen, sophomores and juniors. The fee supports tutors, supplemental instruction leaders and writing consultants for undergraduates.

Off-campus fees

The university fee, the student activity fee and the student health fee are not charged to students taking off-campus classes.

Program fees

Undergraduate students are assessed an additional program fee based on their school/college and their program of study. The fee is assessed at a per-credit-hour rate for part-time students and at a flat rate for full-time students. For specific information about the fees, refer to the Student Accounting Department (<https://accounting.vcu.edu/>) website.

Housing and dining fees

Housing fees

A nonrefundable prepayment fee of \$250 is required for new students at the time the housing/dorm application is submitted and is credited toward the student's first-semester housing costs. New and continuing students should refer to cancellation deadlines established by VCU Residential Life and Housing if they wish to be released from their contractual obligations. After these dates, cancellations are not permitted and students will be held to the terms and conditions of their housing contracts. Students are advised to carefully read the terms and conditions of their housing contracts prior to signing.

Half the yearly housing cost is charged to the student's account each semester and is paid the same time that tuition and other fees are due. Additionally, students will be held responsible for the cost of any damages to their room, its furnishings and its common living area during their residency.

Housing contracts extend through the nine-month academic year or for a 12-month period, depending upon the type of residence hall assignment. Students are not released from their housing contract between semesters. Questions regarding housing contracts should be directed to VCU Residential Life and Housing via email at vcuhousing@vcu.edu or by calling (804) 828-7666.

Dining fees

Dining plans are available to enrolled students who are in good financial standing with the university. All undergraduate students residing in university housing, other than VCU apartment residents, are required to purchase one of the essential dining plans through VCUDine. If a dining plan is not selected, students will be assigned and billed for the 200 Swipe Plan + 300 Dining Dollars.

Dining plans are charged to the student's account each semester and are paid the same time that tuition and other fees are due. Plans added later in the semester are subsequently billed with payment due by the due date indicated on the ebill. Changes and cancellations to dining plans will be accepted up to 4 p.m. on Friday, the second week of classes.

VCU dining plans consist of Swipes and Dining Dollars. Swipes provide a specific number of meals to be used at any time during the semester at the all-you-care-to-eat dining halls or any VCUDine retail location participating in the VCUDine meal exchange program. More than one VCU dining plan may be purchased per semester; however, dining plan swipes and Dining Dollars do not carry over and are forfeited at the end of each semester.

For a complete list of dining plans, locations and hours, see the VCUDine (<http://www.bsv.vcu.edu/dining/>) website.

Dining Dollars

Dining Dollars is a rechargeable declining-balance account on a student's dining plan that allows them to make tax-free food purchases at any VCU dining center or VCU retail location. The tax advantage of Dining Dollars provides an 11.3 percent savings on each VCUDine purchase. Additional Dining Dollars may be added following the purchase of a dining plan at any time during the semester. Additions may be made in increments of \$25 (i.e., \$25, \$50, \$75). Dining Dollars can be purchased by credit/debit card online on the VCUDine (<http://www.bsv.vcu.edu/dining/>) website.

Dining online enrollment and payment

Online enrollment for a VCUDine plan is available on the VCUDine (<http://www.bsv.vcu.edu/dining/>) website. Students will be billed through the Student Accounting Department and payment may be made online through VCU eServices (<http://www.eservices.vcu.edu/>).

Dining plan changes or cancellations must be made by contacting VCUDine at (804) 828-1148 or online through the VCUDine (<http://www.bsv.vcu.edu/dining/>) website. The last day to make changes or cancellations to a plan is the Friday of the second full week of classes.

Please address all dining service concerns and questions to VCUDine, 1111 W. Broad St., Suite A, Room 131, Box 980247, Richmond, VA 23298-0247; call (804) 828-1148; email dining@vcu.edu; or visit the VCUDine (<http://www.bsv.vcu.edu/dining/>) website.

Installment payment plan

The installment payment plan assists students in meeting the cost of their higher education by offering a convenient payment option. The university-administered IPP is offered only during the fall and spring semesters. The plan distributes the cost of tuition, fees, housing and dining charges for a semester into four equal installments.

All students attending the university with current charges of \$100 or more are eligible to participate. All prior semester balances must be paid in full to be eligible.

Students who receive financial aid are also eligible for participation in the IPP. These students may deduct their financial aid (including third party-sponsored scholarships and 529 accounts) to determine the net total due. These payments are not considered installment payments. If it is \$100 or more, the remaining amount may be paid in installments.

In some cases, a student may receive a financial aid refund, and then subsequent charges for the semester are added to the student's account. If the student has received a refund, he or she is ineligible to participate in the IPP unless the refund has been repaid to the university in full. The student must then pay the initial payment and follow the instructions to enroll in the IPP.

There is a \$25 nonrefundable application fee payable with the first installment of each semester. The IPP option must be selected each fall and spring semester regardless of whether the student participated during a previous semester. Interest is not assessed on the outstanding balance. Information about how to participate in the IPP and the online enrollment process is available on the Student Accounting website (<https://accounting.vcu.edu/plan/>).

University refund policy

The official university tuition and fees refund policy is applicable only for the fall and spring semesters (excluding short/nonstandard courses) and is outlined in the table below. Refunds are calculated on a course-by-course, per-credit-hour basis, disregarding the full-time cap amounts. Students who are enrolled full time and withdraw from courses may not receive a refund.

Definition of drop vs. withdraw

Drop – Charges are removed to indicate that the student never attended the class. The student is not eligible to receive financial aid, and any financial aid already credited to the student's account based on the

original course registration will be removed from the student's account and may create a balance due to the university.

Withdraw – Results in the academic grade of W. Charges are assessed and adjusted according to the University Refund Policy. Students who have been given a medical withdrawal are assessed and adjusted no differently than other withdrawals. Students may owe a balance to the university.

Fall and spring semesters – standard classes only

The official university tuition and fees refund policy is applicable only for the fall and spring semesters. This table pertains to both complete withdrawals and reduced course loads for standard classes (excluding short/nonstandard courses). The policy is based on the weeks of the semester and not necessarily the class meeting days (if the semester begins on a Thursday, the first week of classes is from Thursday through the following Wednesday).

Refunds (reduction of charges) are calculated on a course-by-course, per credit hour basis, disregarding the full-time cap amounts for block students and discounted tuition for non-block students. Charges are recalculated based on the number of credit hours in which the student remains enrolled in addition to the nonrefundable percentage portion of credit hours for the withdrawn course(s). Students who are enrolled and withdraw from courses may not receive a reduction in charges.

Withdrawal/drop period	Student refund	Retained by university
Drop prior to the first day of classes	100% tuition and fees	0%
Drop/withdraw first week of class	100% tuition and fees	0%
Withdraw second week of class	80% tuition and university fee	20% tuition and university fee; 100% of all other fees
Withdraw third week of class	60% tuition and university fee	40% tuition and university fee; 100% of all other fees
Withdraw fourth week of class	40% tuition and university fee	60% tuition and university fee; 100% of all other fees
Withdraw after fourth week of class	0%	100% all fees

Fall and spring semesters – short and nonstandard classes

This table pertains to both complete withdrawals and reduced course loads for classes classified as nonstandard or short by the Office of Records and Registration. A full refund for a nonstandard or short course's tuition and applicable fees will be granted if the course is dropped no later than the day following the first day of a given class. (This deadline also is applicable if the class does not meet on two consecutive days.) No refund of tuition and fees is given for withdrawals from short and nonstandard courses.

Withdrawal/drop period	Student refund	Retained by university
Drop prior to the first day of classes	100% tuition and fees	0%
Drop/no later than the day following the first day of class	100% tuition and fees	0%
Withdraw	0%	100% tuition and all fees

Summer semester – all courses

This table pertains to both complete withdrawals and reduced course loads for the summer semester. A full refund for summer tuition and applicable fees will be granted if the course is dropped no later than the day following the first day of a given class. (This deadline also is applicable if the class does not meet on two consecutive days.) No refund of tuition and fees is given for withdrawals during the summer semester.

Withdrawal/drop period	Student refund	Retained by university
Drop prior to the first day of classes	100% tuition and fees	0%
Drop/no later than the day following the first day of class	100% tuition and fees	0%
Withdraw	0%	100% tuition and all fees

Intersession and J-term – all courses

This table pertains to holiday intersession courses. A full refund for holiday intersession will be granted if the course is dropped on the day of the first class meeting. No refunds are given for withdrawals of holiday intersession courses.

Withdrawal/drop period	Student refund	Retained by university
Drop prior to the first day of classes	100% tuition	0%
Drop/no later than the day following the first day of class	100% tuition	0%
Withdraw	0%	100% tuition

The refund policy and deadlines of the English Language Program are different from the university's refund policy for academic classes. Details of the policy may be obtained from the English Language Program in the Global Education Office.

Students who are financial aid recipients and withdraw from all courses prior to completing 60 percent of the semester are subject to the Federal Return of Title IV Funds Policy. For more details see the financial aid section of this bulletin.

Refunds will be computed based on the actual withdrawal date certified by the Office of Records and Registration. Refunds will not be made to students who do not attend classes and have not completed the required withdrawal procedure. Refund processing may take approximately two weeks. Exceptions to this refund policy are made only in rare instances. Written application for an exception must be filed in the Student Accounting Department to the university's Refund Waiver Appeals Committee. Appeals must be submitted within three years from the semester in which the student is appealing.

For information regarding cancellations and adjustments to dining and housing charges, refer to the room and dining contract terms and conditions or the Housing (<http://www.housing.vcu.edu/>) and VCU Dine (<http://www.campusdish.com/en-US/CSMA/VirginiaCommonwealth/DiningPlans/>) websites.

Refunds for overpayments

An overpayment from financial aid and scholarships will be refunded automatically through the financial aid refund process, if the overpayment occurs while the student is currently enrolled. During the fall

and spring semesters refunds will begin to be available starting on the first day of classes.

Requests for refunds that are not generated from the overpayment of financial aid should be made in writing to VCU Student Accounting Department, Box 843036, Richmond, VA 23284-3036. Refund request forms are available at the Student Financial Management Center and on the Student Accounting website (<http://www.accounting.vcu.edu/>).

In accordance with credit card regulations, the university will refund the credit card account with any credit balance that may result on a student's account as the outcome of a credit card payment. The remaining credit balance, if any, will be refunded to the student.

Students are responsible for paying any increase in charges that may occur after the generation of any refund. Students are also responsible for paying an outstanding balance as a result of cancelled or reduced financial aid.

Military services tuition relief, refund and reinstatement guidelines

These guidelines apply to students whose service in the uniformed services (military) has necessitated their sudden withdrawal or prolonged absence from their enrollment at Virginia Commonwealth University and provides for the required re-enrollment of such students. Students are offered the following enrollment secession options:

1. Drop all courses before the end of the add/drop period and receive a full reduction of tuition and fee charges. Students residing in university housing and participating in a dining plan will be released from their housing and dining service contracts and will receive a prorated refund of these charges. Students will be asked to sign the drop request form with the director of military student services indicating that they are not receiving a financial aid refund. If the reduction of charges results in an overpayment on the account after any financial aid or third party awards have been reduced, the student will be issued a refund.

This option might best meet the needs of students who are called to active duty service during the first week of school and did not receive a financial aid refund check or direct deposit.

2. Receive a grade of Incomplete (IM – incomplete military) in one or all courses. Students residing in university housing will be released from their housing and dining service contracts and will receive a prorated refund of these charges. Students who chose to take a grade of IM will not have tuition and fees reduced for these courses because, upon receipt of an approved change of grade, credits will still be earned for the semester. Students will have 12 months from the date that they return from active service to complete the course work and earn a course grade. If a student received financial aid, the amount recovered to the financial aid accounts will follow the Federal Financial Aid Refund Policy.

This option might best meet the needs of students who have essentially completed all course work in a class for the semester, but have yet to turn in a final project, an exam or other materials. It should be agreed upon between the instructor and the student that the remaining course work can reasonably be completed during the 12-month period.

3. Accept administrative withdrawal (WM – withdrawn military) from all courses as of the effective date of the orders to active duty. If this option is elected, a full refund of all tuition, fees and prorated

room and dining charges will be made. If a student received financial aid, the amount recovered to the financial aid accounts will follow the Federal Financial Aid Refund Policy. If the reductions of charges results in an overpayment on the account after any financial aid or third party awards have been reduced, the student will be issued a refund.

This option might best meet the needs of students who are called to national service in the middle of a semester and have not completed 75 percent of their class requirements. This option also might best meet the needs of students who are leaving the university during the first week of class and received a financial aid refund check or direct deposit as a result of their financial aid.

4. Students who have completed 75 percent of the course requirements at the time of military activation and, notwithstanding certain exceptions noted below, who meet requirements as determined and agreed upon by the faculty instructor and the student may receive full course credit.

Students may receive full course credit if 75 percent of course requirements have been completed, under certain circumstances. The instructor is responsible for determining what percentage of course requirements have been completed based on factors to include but not limited to contact time, examinations, projects, work experience and clinical experience. The awarding of full credit cannot be made where the incomplete requirements are essential components of the course or program required by law or regulatory bodies, required for competency in the work place, or required to complete licensure examinations.

Leaving the university

To initiate this process, the student must provide the Office of Military Student Services with a copy of his or her active duty orders in addition to a printed copy of his or her course registration for that semester and indicate Option 1, 2, 3 or 4 for each course. If Option 4 is selected, the student must provide documentation from the instructor. The director of military student services will forward all documentation to the university registrar to take the appropriate enrollment action, post the appropriate grades and send a copy of the orders and a copy of the student course request statement to the director of financial aid and the director of student accounting.

Returning to the university

Students who withdrew from the university as a result of military deployment, mobilizations or duty changes are entitled to return without having to requalify for admission so long as the student (a) returns after a cumulative absence of no more than five years and (b) notifies the appropriate admissions office of the intent to return to the university not later than three years after the completion of military service obligation. The student may return to the university in the same program of study. With the consultation of an adviser, a comparable program of study may be chosen for discontinued programs.

VA benefit grievance procedure

The Virginia State Approving Agency, is the approving authority of education and training programs for Virginia. Their office investigates complaints of GI Bill beneficiaries. While most complaints should initially follow school grievance policy, if the situation cannot be resolved at the school, the beneficiary should contact the SAA (<https://www.dvs.virginia.gov/benefits/education/>).

Delayed payments for Chapter 31, 33 or Frye Scholarship students

Chapter 31, 33 or Frye recipients whose tuition and fees payments are delayed will not be denied access to classes, libraries or other institutional facilities or be required to borrow additional funds to cover tuition and fees if these are being covered by the Department of Veterans Affairs.

In the event that a Chapter 31, 33 or Frye recipient is assessed a late fee due to a delayed payment coming from the VA, VCU will waive the late fee if the student submitted the required benefit request forms to the Military Student Services Office in a timely manner; the student paid all noncovered charges by specified payment deadlines; and the delayed Post 9/11 or Frye payment covers the student's outstanding balance. The late fee will be waived once the Post 9/11 payment is received by VCU.

Veterans Access, Choice and Accountability Act of 2014

codified in 38USC3679(c)

The following individuals shall be charged a rate of tuition not to exceed the in-state rate for tuition and fees purposes:

- A veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill – Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more
- Anyone using transferred Post-9/11 GI Bill benefits (38 U.S.C. § 3319) who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more
- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge or release as described above and must be using educational benefits under either chapter 30 or chapter 33, of title 38, United States Code
- Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence)
- Anyone using transferred Post-9/11 G.I. Bill benefits (38 U.S.C. § 3319) who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty

The policy shall be read to be amended as necessary to be compliant with the requirements of 38 U.S.C. 3679 as amended.

Accident insurance

VCU is not responsible for accidents occurring to students in connection with class, laboratory, shop, fieldwork, athletics, student activities,

travel or other activities. However, the university offers its students an approved insurance plan, providing substantial benefits at group rates. The insurance extends for a 12-month period beginning Aug. 18, or from the beginning of the second semester to the next Aug. 18, and includes coverage for accidents, hospitalization, medical, surgical and other benefits for illnesses. Married students may enroll spouses and children. The university strongly recommends, but does not require, that all students enroll in student group health insurance. For further information, contact University Student Health Services or visit the USHS website (<http://www.students.vcu.edu/health/health-insurance/>).

Financial aid

Student Financial Management Center
Harris Hall
1015 Floyd Ave.
Box 843026
Richmond, Virginia 23284-3026
Phone: (804) 828-6669
Fax: (804) 827-0060
finaid.vcu.edu (<http://finaid.vcu.edu/>)

The Student Financial Management Center provides a variety of services to help students afford higher education via grants, scholarships, work-study employment and loans. Financial counselors provide one-on-one consultations to students, their parents, faculty and staff about accounts, educational expenses and financial management.

VCU Financial Aid administers and distributes funds from federal, state, institutional and private fund sources. Financial Aid uses all available funds to help students gain access to a college education. Aid funds are applied first to the student's university bill; refunds are generated when financial aid exceeds university charges. Eligibility for financial aid varies depending on a student's academic and financial circumstances. In most cases, each student will qualify for some form of financial assistance.

Current and detailed information on financial aid programs, financing college and planning for the future, along with links to free scholarship search services and to schedule one-on-one appointments are available on the SFMC website (<https://sfmc.vcu.edu/>).

Counseling center locations

Four financial counseling and information centers are available to prospective and enrolled students. You may visit the offices in person or submit a written request to receive printed information.

Monroe Park Campus

Grace E. Harris Hall
1015 Floyd Avenue, First Floor
Box 843026
Richmond, Virginia 23284-3026
Phone: (804) 828-6669
Fax: (804) 827-0060
sfmc.vcu.edu/contactus (<https://sfmc.vcu.edu/contactus/>)

College of Health Professions, School of Nursing and School of Pharmacy

VMI Building, Room 334
1000 East Marshall Street
Box 980277
Richmond, Virginia 23298-0277
Phone: (804) 828-2702

Fax: (804) 827-0060

School of Dentistry

Lyons Building, Room 309

520 North 12th Street

Box 980566

Richmond, Virginia 23298-0566

Phone: (804) 828-9953

Fax: (804) 828-6072

School of Medicine

McGlothlin Medical Education Center

1201 East Marshall Street, Room 4-306

Box 980565

Richmond, Virginia 23298-0565

Phone: (804) 828-4006

Fax: (804) 827-5555

General information

Many students at the university receive financial aid. Below are some recommendations and requirements of VCU Financial Aid.

eServices – online records access

Students are encouraged to use eServices, a password-protected service for viewing VCU student records online, to check the status of their financial aid application and award package. Students also may register for classes, print bills and more. The eServices website is accessed through myVCU portal on the VCU homepage (<http://www.vcu.edu>).

Email – official method of communication

Students are required to obtain an official VCU student email account within one week of the beginning of their first semester of enrollment. Students are responsible for reading university-related communications sent to their official VCU student email account in a timely fashion. VCU Financial Aid uses email to provide financial aid information, to request documentation to support financial aid application data and to provide financial aid application status and award information. Information on how to set up an account is available online (<https://www.vcu.edu/email/>).

Identification requirements

Students must provide picture identification, preferably a VCUCard, for in-person access to financial aid records. For the student's protection, information provided over the telephone and email may be limited if the financial aid staff member is not confident of the student's identity.

University bill

The Student Accounting Department issues online bills for tuition, fees and other university charges. When financial aid awards (grants, scholarships and loans) are not enough to pay university charges, the remaining balance must be paid from personal funds, credit card or the VCU Installment Payment Plan. Federal work-study awards will not be deducted from university charges because those funds are paid directly to the student, based on hours worked. Any outstanding balance owed will prevent a student from registering for courses and receiving official transcripts. Students who fail to pay their balance on time may be assessed a late payment fee and have a financial hold placed on their account. If the balance remains outstanding after the semester ends, their account may be referred to the VCU Collection Unit at which time collection costs will be assessed.

Types of financial aid

There are three basic types of financial aid: loans, grants and work-study. Each type has different features and advantages.

Loans

In terms of total dollars available, long-term loan programs provide the most dollars. A loan is money borrowed and must be repaid at a later time. In most cases, the student is the borrower and repays the loan once he or she is no longer pursuing a degree or certification at least at the half-time enrollment level. There also is a loan program where the parent is the borrower and begins repaying the loan while the student is still enrolled. All educational loans carry competitive interest rates and terms. Some include interest benefits, meaning the federal government pays the interest on the loan while the student is enrolled. Student loan repayment generally begins after the student is no longer enrolled half time. Multiple repayment plans provide the borrower with flexible repayment options. Selected loan programs include:

- Federal Direct Loan (subsidized and unsubsidized)
- Health Professions Student Loan
- Loan for Disadvantaged Students
- Nursing Student Loan
- Primary Care Loan
- Federal Direct PLUS Loan

First-time borrowers in the Federal Direct Loan program must complete entrance counseling prior to the first loan disbursement. A link to directions for completion of this requirement (<https://finaid.vcu.edu/types/loans/>) can be found on the Financial Aid website.

Grants and scholarships

Grants and scholarships are awarded without any expectation of repayment. Most grants are reserved for students with the greatest financial need. Most scholarships are based on merit. Selected programs include:

Undergraduate programs

- Federal Pell Grant
- Commonwealth Award (state grant)
- Virginia Guaranteed Assistance Program (state grant)
- Federal Supplemental Educational Opportunity Grant
- VCU Scholarships
- Honors Scholarships
- Departmental Scholarships

Health profession programs

- Scholarships for Disadvantaged Students
- State Dental Practice Scholarships
- General Assembly Nursing Scholarships
- Departmental Scholarships

Work-study

Work-study is a form of financial aid that pays wages for work performed through employment. Work-study positions are located on campus and in approved locations off campus. Please visit the financial aid website for additional information (<https://finaid.vcu.edu/types/workstudy/>).

Eligibility, availability and special circumstances

Eligibility for financial aid

Most students are eligible for some type of financial aid regardless of family financial circumstances. Basically, to receive aid from any of the federal or state student aid programs, students must:

- Submit a Free Application for Federal Student Aid or Renewal FAFSA designating VCU (school code 003735) to receive FAFSA results.
- Demonstrate financial need, except for some loan programs
- Have a high school diploma or a General Education Development certificate
- Be enrolled or accepted for enrollment to an eligible degree or certificate program
- Be enrolled at least half time, six or more undergraduate credit hours (exceptions possible for Pell Grants) or five or more graduate credit hours
- Be a U.S. citizen or eligible noncitizen
- Have a valid Social Security number (unless from the Republic of the Marshall Islands, the Federated States of Micronesia or the Republic of Palau)
- Meet Satisfactory Academic Progress standards as defined by VCU Financial Aid (The full VCU SAP policy (<https://finaid.vcu.edu/manage/sap/>) is available on the Financial Aid website.)
- Certify that federal and state financial aid will be used for educational purposes only
- Not be in default on a federal student loan and not owe money on a federal student grant
- Comply with Selective Service registration, if required
- Not be convicted under federal or state law of sale or possession of illegal drugs

Detailed information can be found in the federal Student Guide, available in print form from VCU Financial Aid or electronically on the Federal Student Aid website (<https://studentaid.ed.gov/sa/>).

Availability of financial aid for special programs

Summer studies

Limited financial aid may be available during the summer semester. Students interested in financial aid for the summer semester should view the VCU Schedule of Classes (<http://www.pubapps.vcu.edu/scheduleofclasses/>) (posted in March) for more details.

Students interested in financial aid for summer must have a FAFSA on file with VCU Financial Aid and review the summer financial aid policy statement, available on the financial aid website.

Study abroad

Financial assistance is available to eligible students enrolled in approved study-abroad programs. All study-abroad programs must be coordinated through the Global Education Office at (804) 828-8471. Students should work with a financial aid counselor to coordinate aid for their study-abroad program. Information about financial aid and study abroad (<https://global.vcu.edu/abroad/>) is available on the Global Education Office website.

Special circumstances

Financial aid eligibility decisions are made using federal, state and institutional regulations and policies. Students may appeal their award

offers if special circumstances warrant a review. Reasons for an appeal might include one of the following documented circumstances:

- Loss or reduction of employment earnings
- Disability or death of parent or spouse
- Separation or divorce
- Loss or reduction of untaxed income
- Unusual medical expenses
- Dependent and child-care expenses

Any financial aid staff member can advise a student about the procedures on how to file an appeal.

Applying for financial aid

Application process

The financial aid application process for the academic year begins Oct. 1. All students are encouraged to complete and submit the Free Application for Federal Student Aid as soon as possible after Oct. 1, designating VCU (school code 003735) to receive the results. In order to reduce problems, errors and omissions on the FAFSA, students are encouraged to apply electronically using FAFSA online (<https://fafsa.ed.gov/>). Once the FAFSA is filed, the federal processor will send the student a Student Aid Report or electronic SAR acknowledgment, and also will electronically send the information to VCU Financial Aid if VCU was listed as a school to receive the data. If additional information is needed to complete processing of the application, VCU Financial Aid will send the student a request for that information. Responding promptly to such requests will ensure timely processing of the application. Once the review of FAFSA data has been completed, Financial Aid will send the student a financial aid notification.

Priority filing dates

Certain financial aid programs, like federal grants, federal work-study and state grants, have limited funding — this means that there are more students eligible for the programs than there are funds available to award to them. Therefore, students should file the FAFSA as early as possible and reply to requests for additional information promptly to ensure consideration for this type of funding. VCU Financial Aid recommends electronically filing the FAFSA by Feb. 1.

Students who do not have access to the Web may apply using the paper FAFSA, available through VCU, high schools, colleges and most public libraries. Those students completing a paper application should mail it to the federal processor by Feb. 1.

Students should complete the FAFSA early so that it can be processed by the priority filing date of Feb. 1 and may use actual income and tax data in order to meet that deadline. Applicants may be able to use the IRS data retrieval tool to transfer federal tax return information into the FAFSA. Students will receive their actual award letter after their FAFSA application data has been verified.

Applying after the priority filing date

Students can and should apply for financial aid even if they missed the priority filing date because they may still qualify for the Federal Pell Grant and Federal Direct Loans; their parents may qualify for Federal Direct PLUS Loans. If students have not applied for financial aid in a timely manner, they may want to participate in the VCU Installment Payment Plan, which budgets each semester's bill over four payments. Information

about this plan (<https://accounting.vcu.edu/plan/>) can be found on the Student Accounting Department's website.

Verification

To ensure that information provided on the FAFSA is accurate, a student's application may be selected for review at any time during an enrollment period, and the student will be requested to provide documentation that supports the information. By signing the FAFSA, a student (and the student's parent or spouse, if applicable) agrees to furnish such documentation. If the documentation is not provided when requested, financial aid awards will be canceled and any funds already disbursed may need to be repaid.

Satisfactory academic progress

VCU Financial Aid will review all students who have applied for financial aid to be sure that they are making progress toward completion of their degree/certificate. The satisfactory academic progress review will be conducted at least once annually (typically at the end of the spring semester, or whenever the student submits a completed FAFSA). SAP is a combination of qualitative and quantitative components and is measured by:

1. **Grade point average.** Undergraduate students must maintain a 2.0 cumulative GPA. Graduate students must maintain a 3.0 cumulative GPA.
2. **Completion rate.** The completion rate is measured by the number of credit hours earned divided by the number of credit hours attempted. All students who need financial aid funding must successfully complete at least 67 percent of all credit hours attempted (transfer credit hours are included).
3. **Overall progress toward degree/certificate.** Overall progress is measured by the number of credit hours attempted divided by the number of credit hours necessary to complete the degree or certificate program. Students who need financial aid funding may attempt no more than 150 percent of the hours required to complete their degree or certificate program.

When students fail to meet SAP requirements they will receive suspension notices indicating that they are ineligible to receive further financial aid. Students whose eligibility for financial aid has been suspended may submit an appeal if mitigating circumstances prevented the student from maintaining SAP. However, there is no guarantee that the appeal will be approved. Please refer to the Financial Aid website for more details on SAP requirements and the SAP appeal process (<https://finaid.vcu.edu/manage/sap/>).

Federal and state financial aid refund policy

Students who receive federal Title IV or state grant or loan assistance and withdraw from VCU before completing 60 percent of the semester (as measured in calendar days) must have their eligibility recalculated based on the federal return of Title IV funds formula. This federal formula specifies that a student's financial aid eligibility must be recalculated based on the aid the student has earned (based on the number of days that the student was enrolled or attending VCU prior to withdrawal). Any unearned aid (for the period of enrollment that the student did not complete from the date of withdrawal to the end of the semester) must be returned to the appropriate Title IV or state programs from which the student was awarded.

For VCU students who withdraw prior to completing 60 percent of the semester, they will have to return or repay all or a portion of the aid funds

that had been disbursed to their VCU account. As a result, students who withdraw prior to completing 60 percent of the semester may be responsible for all or a portion of their university bill that was previously paid by financial aid sources.

If a student does not officially withdraw from all classes but fails to earn a passing grade in at least one course, federal aid regulations require that the student be considered "unofficially withdrawn," unless it can be documented that the student completed the enrollment period. Unofficial withdrawals require a Title IV refund calculation at the midpoint of the enrollment period. The reduction of federal and state aid will create a balance due to the university that must be repaid.

Military educational benefits and programs

Veteran's certification for VCU is completed within the Military Student Services office located in Grace E. Harris Hall on the Monroe Park Campus. Detailed information about eligibility for Veterans Affairs programs is available on the Military Student Services website (<https://militaryservices.vcu.edu/benefits/>).

Military Student Services
Grace E. Harris Hall, Room 3122
1015 Floyd Avenue
Box 842536
Richmond, Virginia 23284-2536
Phone: (804) 828-6563
Fax: (804) 828-8212
Email: militaryserv@vcu.edu
militaryservices.vcu.edu (<https://militaryservices.vcu.edu/>)

Available programs

For details on any of these programs, please visit the Military Benefits (<https://militaryservices.vcu.edu/benefits/>) and Scholarships and Aid (<https://militaryservices.vcu.edu/scholarships/>) pages on the Military Student Services website.

- Montgomery – GI Bill Active Duty (Chapter 30)
- Vocational Rehabilitation (Voc Rehab, Chapter 31)
- Veterans Education Assistance Program (VEAP, Chapter 32)
- Post 9-11 GI Bill (Chapter 33)
- Survivors' and Dependents Educational Assistance Program (DEA, Chapter 35)
- Montgomery – GI Bill Selected Reserves (Chapter 1606)
- Tutorial Assistance Program
- VA Work-Study Program
- Virginia Military Survivors and Dependents Education Program
- Post 9-11 – Active Duty (Chapter 33)/Yellow Ribbon Program
- Yellow Ribbon Program
- Transferability of Benefit

Eligibility requirements

Eligible veterans/spouses/dependents must comply with the following requirements to receive educational benefits as students:

1. The veteran/spouse/dependent must be accepted into a degree or certificate program or be matriculating as a nondegree-seeking student for only two semesters before having to declare a major.
2. The veteran/spouse/dependent must request certification by completing and submitting VCU's VA education assistance form after obtaining approval via signature of their academic adviser and

registering for courses each semester and each summer session from the Veterans Affairs Office.

3. The veteran/spouse/dependent is eligible to use benefits for only those courses taken toward a degree, certificate program or as prerequisite courses (only two semesters).
4. The veteran/spouse/dependent is not eligible to use benefits for courses taken on an audit basis or if eliminating a course previously taken and paid for by the VA to remove a punitive grade not counted in GPA calculations via VCU's historical repeat option. The repeated course(s) will be paid for by the VA but the student will incur a debt to the VA for the course(s) eliminated from the student's GPA. The VA does not pay for courses that earn no credit.
5. The veteran/spouse/dependent is responsible for ensuring that transcripts are evaluated for transfer credits to be accepted by VCU. Students must submit this information to the Veterans Affairs Office for transmittal to the Veteran's Administration Regional Office.
6. The Veterans Affairs Office must be notified by the student/veteran/spouse/dependent if they change, add, drop or withdraw from courses originally approved by the student/veteran/spouse/dependent's academic adviser and certified by VCU's Veterans Affairs coordinator/certifying official.

Academic advising

Academic advising helps VCU students achieve academic success, as well as develop and pursue educational, career and personal goals. Students may be assigned multiple academic advisers to support their studies depending on their declared major(s), minor(s), honors standing or pre-health interests. To ensure timely degree progression and successful career outcomes, all students are encouraged to visit with their academic adviser at least once a semester, every semester, until graduation.

To make an appointment with your academic adviser(s), log in to vcu.campus.eab.com (<http://vcu.campus.eab.com>) or call (804) 827-8648.

First-year students

University Academic Advising provides academic advising for all first-year students, regardless of their majors. All incoming students are assigned to a specific academic adviser who works closely with them throughout their first year. Advising occurs through many forms, which may include individualized or group advising, or through many first-year courses offered just to first-year students, such as UNIV 101 Introduction to the University. Students can expect their advisers to help them understand university procedures, interpret general education and major requirements, address academic difficulties, find support resources, and help discover and plan out individualized educational and career goals.

Academic advising is an ongoing process. Advisers want to have continuing relationships with their advisees. While first-year students are required to meet with their assigned advisers before registering for classes each semester, it is also important for students to meet with advisers throughout the first year. Students can make appointments (vcu.campus.eab.com (<http://vcu.campus.eab.com>)) or email their advisers to seek help. After students attain sophomore standing or are admitted into their programs of study, they will be transitioned to academic advisers within their majors and minors.

While students are ultimately responsible for understanding information about regulations, majors and courses as outlined in the Undergraduate

Bulletin, academic advisers can help students interpret information to ensure they make appropriate educational choices.

For more information on advising programs, visit the UAA website (<http://academicadvising.vcu.edu/>) or call (804) 827-8648.

Undeclared students

The University Academic Advising Discovery Program offers specialized advising for students who are still deciding about their programs of study, who are in transition between two majors or who have not yet declared a major. Discovery Program advisers help undeclared students consider educational options and make appropriate choices based on personal interests, skills and abilities, values, and professional goals.

Meta majors

Students enrolled in the undeclared major at VCU will select a "meta major" concentration until successful admission into a degree program. The meta major structure is designed to support students as they explore related major areas and provide a plan of study for the first academic year. The undeclared major is not a degree-granting program, so students cannot complete a degree in any of the "meta-major" concentrations. As students successfully complete courses and other admissions requirements, students and advisers will determine a time frame to apply for admission into a degree-granting program at VCU.

Undeclared – Arts

Students in the arts meta major are interested in pursuing a program offered through the VCU School of the Arts (<https://arts.vcu.edu/>). These programs include: art education, art history, cinema, communication arts, craft and material studies, dance and choreography, fashion design, fashion merchandising, graphic design, interior design, kinetic imaging, music, painting and printmaking, photography and film, sculpture and extended media, and theatre.

Students in the arts meta major complete recommended courses in the first two semesters required for the School of the Arts, alongside the VCU Core Curriculum and general education program. The recommended courses serve as a guide to students for the best path toward graduation, in as timely a fashion as possible. If a student is still undecided after their first year, they should work closely with their academic adviser to create a customized plan of study for the second year. Students might choose to take additional courses over the summer to catch up or get ahead if the courses they need are offered.

All arts meta major applicants to the VCU School of the Arts must submit a change of major application online. This online application asks for personal and contact information, current and preferred curriculum, a personal statement, extracurricular activities, one to three recommenders' emails and required supplemental materials (audition, essays, portfolio). Students can view the additional application requirements for their major of interest on the School of Arts (<https://arts.vcu.edu/>) website.

Undeclared – Humanities

Students in the humanities meta major are interested in pursuing a humanities-related program offered through VCU's College of Humanities and Sciences. These programs include: English, foreign language, gender, sexuality and women's studies, history, international studies, philosophy, and religious studies.

Students in the humanities meta major complete recommended courses in the first two semesters required for the VCU Core Curriculum alongside the general education program for the College of Humanities and Sciences. The recommended courses serve as a guide to students for the best path toward graduation, in as timely a fashion as possible. If a student is still undecided after their first year, they should work closely with their academic adviser to create a customized plan of study for the second year. Students might choose to take additional courses over the summer to catch up or get ahead if the courses they need are offered.

Undeclared – Social sciences

Students in the social sciences meta major are interested in pursuing a social science-related program offered at VCU. These programs include: African American studies, anthropology, criminal justice, economics*, education*, homeland security and emergency preparedness, mass communications*, political science, psychology, sociology, social work, and urban and regional studies.

Students in the social sciences meta major complete recommended courses in the first two semesters that include a foundation in social science as well as courses required for the VCU Core Curriculum and general education program. The recommended courses serve as a guide to students for the best path toward graduation, in as timely a fashion as possible. If a student is still undecided after their first year, they should work closely with their academic adviser to create a customized plan of study for the second year. Students might choose to take additional courses over the summer to catch up or get ahead if the courses they need are offered.

**Please consult with your adviser as these programs have unique requirements compared to others within the same meta major.*

Undeclared – STEM

Students in the STEM meta major are interested in pursuing a science-, technology-, engineering- or math-related program offered at VCU. These programs include: biology, bioinformatics, biomedical engineering*, chemical and life science engineering*, chemistry, computer engineering*, computer science*, electrical engineering*, environmental studies, forensic science, health, physical education and exercise science, mathematical sciences, mechanical engineering*, physics, interdisciplinary science, secondary education and teaching with a concentration in engineering, and statistics.

Students in the STEM meta major complete recommended courses in the first two semesters that include math and science foundations as well as courses required for the VCU Core Curriculum and general education program. The recommended courses serve as a guide to students for the best path toward graduation, in as timely a fashion as possible. If a student is still undecided after their first year, they should work closely with their academic adviser to create a customized plan of study for the second year. Students might choose to take additional courses over the summer to catch up or get ahead if the courses they need are offered.

**Please consult with your adviser as these programs have unique requirements compared to others within the same meta major.*

Undeclared – Discovery

Students in the discovery meta major are interested in a multitude of programs at VCU and should work closely with their academic adviser to decide on their path of study.

Students in the discovery meta major complete recommended courses in the first two semesters that include courses required for the VCU Core

Curriculum and general education program. The recommended courses serve as a guide to students for the best path toward graduation, in as timely a fashion as possible. If a student is still undecided after their first year, they should work closely with their academic adviser to create a customized plan of study for the second year. Students might choose to take additional courses over the summer to catch up or get ahead if the courses they need are offered.

Specialized programs

The programs below are highly specialized and include additional major and entrance requirements and thus are not included in the meta major options.

Pre-health majors

Pre-health major in clinical laboratory science
Pre-health major in dental hygiene
Pre-health major in nursing
Pre-health major in clinical radiation sciences

Business foundation (departments)

Accounting
Economics
Finance, Insurance and Real Estate (including financial technology program)
Information Systems
Management and Entrepreneurship
Marketing
Supply Chain Management

Academic advising

Discovery Program advisers offer a blend of individual and group counseling sessions and workshops to assist students who have not yet declared a major or who are being transitioned out of competitive standing programs. Advisers assist all undeclared students with monitoring their academic progress, course scheduling, interpreting university regulations and procedures and maximizing their academic success. In addition, each semester the Discovery Program offers UNIV 103, a class that concentrates on careers, educational opportunities and the development of student potential. Advisers also provide alternative advising options for students who do not qualify for, or are not admissible to, their preferred programs of study. By considering alternatives, students will uncover options that they can find personally, educationally and professionally fulfilling.

Students must declare majors within one of the university's schools or colleges no later than the semester in which they complete 60 credits.

Changing to undeclared from another major

Students planning to transition to an undeclared major should complete the online Change of Major Form (<https://docs.google.com/a/vcu.edu/forms/d/e/1FAIpQLScwHVA7WToKtPDdLwnlyODKpQuyO9gZo1gCg1MtVgMKi6ZcEQ/viewform/>).

For more information on advising programs, visit the UAA website (<http://academicadvising.vcu.edu>) or call (804) 827-8648.

Transfer students

Students who transfer to VCU come from a wide range of two- and four-year institutions. VCU recognizes that transfer students constitute a very diverse group with varying and unique needs. Transfer students are

served directly through the school or college according to their intended program of study. The Transfer Center helps transfer students work with Undergraduate Admissions and the undergraduate units to seek ways to continuously facilitate and enhance the transfer process to VCU. The center also assists the schools and colleges of VCU to develop relationships with Virginia community colleges. VCU's chief transfer officer develops and maintains articulation agreements with sister institutions, maintains the VCU Transfer Guide and serves as a point of contact for prospective and incoming transfer students.

For more information on advising programs, visit the Transfer Center website (<http://www.transfer.vcu.edu/>) or call (804) 827-1349.

Pre-health majors

University Academic Advising provides academic advising programs to assist students in pre-health majors in clinical laboratory sciences, clinical radiation sciences, dental hygiene and nursing.

Students pursuing admission into baccalaureate degree programs in clinical laboratory sciences, clinical radiation sciences, dental hygiene or nursing will have "pre-major" status until successful admission into the degree program. The pre-health majors are not degree-granting majors, so students cannot complete a degree in any of the pre-health majors. As students successfully complete science courses and other admissions requirements, students and advisers will determine a timeframe to apply for admission into a degree-granting program in a health care field. UAA provides academic advisers who are uniquely trained to work with pre-health majors, guiding students as they pursue the required course work and skill sets outlined for competitive candidacy in each of these pre-major programs. These advisers are also trained to guide students through parallel majors that will still support successful graduation and career outcomes.

Pre-health major in clinical radiation sciences

Students interested in the pre-health major in clinical radiation sciences must complete the one-year program requirements for application to the Bachelor of Science degree program in clinical radiation sciences offered by the VCU College of Health Professions. The pre-health major in clinical radiation sciences program requires specific prerequisite courses (outlined below). Once accepted, students will spend three years in the clinical radiation sciences degree program, which begins in the fall.

At the time of application, normally fall of the freshman year, the student will be able to indicate their choice of concentration: diagnostic medical sonography, nuclear medicine technology, radiography or radiation therapy. All concentrations require the same academic prerequisite courses listed below.

Completion of the pre-health major in clinical radiation sciences does not guarantee admission to the program for the B.S. in Clinical Radiation Sciences nor does it result in a college degree. Students must be admitted to and complete the baccalaureate program to earn a B.S. degree in clinical radiation sciences. Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

Students are strongly encouraged to consult with a UAA pre-health major academic adviser to learn about admission requirements that are specific to the program and to speak about alternate/parallel majors. For more information about the admission requirements for the B.S. in Clinical

Radiation Sciences, visit the department's website (https://chp.vcu.edu/programs/#degree_279278).

Requirements for the pre-health major in clinical radiation sciences

It is recommended that applicants select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of the concentrations within the Bachelor of Science in Radiation Sciences.

Students interested in the pre-health major in clinical radiation sciences must complete biological concepts with laboratory, human anatomy (lab included), human physiology with laboratory, and a physics course with laboratory. The non-science prerequisites for the pre-health major in clinical radiation sciences are: UNIV 111 and UNIV 112, college algebra, introduction to psychology and a selection from VCU's general education curriculum.

Although not required as prerequisites, courses in writing and rhetoric, introduction to clinical radiation sciences, a visual or performing art class, medical terminology, and basic practice of statistics are highly recommended.

Many students will require an additional year of study before applying to the clinical radiation sciences degree program. All students admitted to a Bachelor of Science in Clinical Radiation Sciences must demonstrate aptitude, abilities and skills in the following categories: sensory, communication, physical/mobility, cognitive and behavioral/social. These categories are further delineated in the Technical Standards for Admission and Graduation documentation.

Following a review of admissions credentials, an interview with the admissions committee will be required for most applicants. If needed, the department will contact the student to schedule an interview. Following admission, successful completion of a criminal background check and drug testing will be required (at student expense) for participation in clinical education courses. Failure to pass one of these tests will prevent the student from successfully completing the clinical education requirements and, therefore, the program.

Changing to the pre-health major in clinical radiation sciences from another major

Current VCU students who wish to change their major to the pre-health major in clinical radiation sciences must meet the following criteria to be considered for the major:

- Minimum GPA of 2.8
- No more than 75 credits completed

Students who do not meet these requirements may see a pre-health adviser, but they will not be assigned to a pre-health adviser in Navigate.

Progression policy

Students interested in pursuing the B.S. in Clinical Radiation Sciences are admitted initially into the pre-health major in clinical radiation sciences, which is not a degree-granting major. In order to remain in the pre-clinical radiation sciences program, students must meet the following criteria.

- Students must maintain a minimum 2.8 VCU cumulative GPA.
 - If a student's VCU cumulative GPA drops below 2.8, they will be placed on pre-health probation and allowed one semester to

raise their cumulative GPA to 2.8 – provided it is mathematically possible to do so. If it is not mathematically possible to do so, or if the student fails to raise their minimum cumulative GPA to 2.8 during their probationary semester, they will be removed from the pre-clinical radiation sciences major and transitioned into their secondary major. If no secondary major exists, students will be moved into the Discovery program (undeclared major) where they will receive assistance with selecting another major.

- Pre-health probation students: Students must meet with their pre-health adviser prior to the add/drop deadline of the pursuant semester in order to adjust their class schedule and to create an **action plan**.
- By the time a student has attempted¹ 45 credits, if they have not successfully matriculated into the clinical radiation sciences major, they must declare a secondary major related to their parallel plan.
- If a student exceeds 75 attempted¹ credits and has not successfully matriculated into the clinical radiation sciences major, they will be removed from the pre-clinical radiation sciences major and their secondary major will become their primary major.

Details of special requirements for admission to the clinical radiation sciences program can be found on the degree requirements tab of the clinical radiation sciences concentration pages (<http://bulletin.vcu.edu/undergraduate/allied-health-professions/radiation-sciences/#degreestext>) of this Bulletin.

Transfer students who are admitted to the pre-health major in clinical radiation sciences must apply to the B.S. in Clinical Radiation Sciences degree program following the minimum number of semesters needed to complete the prerequisite courses required for admission. Transfer students must adhere to the same guidelines outlined above (re: declaring secondary majors, developing action plans, etc.).

Students may appeal the removal from the pre-health major in clinical radiation sciences via the associate director of pre-health advising in University Academic Advising. Students must initiate the appeal with their assigned academic adviser. The associate director may, at his or her discretion, extend the time period needed to meet the requirements, generally by only one semester. A student who wishes to appeal must submit his or her appeal at least one week prior to the start of the next semester in which they register for classes.

¹

Attempted hours include credit hours from courses in which a W, an F or any other grade has been assigned. This is reported on the transcript as “overall attempted hours.”

Prerequisites for the clinical radiation sciences program

Course	Title	Hours
VCU courses		
BIOL 205	Basic Human Anatomy ¹	4
MATH 141	Algebra with Applications (satisfies general education quantitative foundations)	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4

Select one of the following (Note the lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.):

PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory ²	4
OR		
PHYS 201	General Physics I ²	
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course		3
Total Hours		29

¹

The prerequisites for BIOL 205 include BIOL 101 and BIOZ 101.

²

The prerequisite for PHYS 201 is MATH 151.

The minimum total of credit hours required (for admission to clinical radiation sciences program) is 29.

Sample curriculum outline

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
MATH 141	Algebra with Applications (satisfies general education quantitative foundations)	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15

Spring semester

BIOL 205	Basic Human Anatomy	4
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UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
Select one of the following (Note the lecture component satisfies general education AOI for scientific and logical reasoning.):		4
PHYS 101 & PHYZ 101 OR PHYS 201	Foundations of Physics and Foundations of Physics Laboratory	
General education course		3
Term Hours:		14
Summer semester		
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
Term Hours:		4
Total Hours:		33

The minimum number of credit hours required (for admission to clinical radiation sciences program) is 29.

Pre-health major in dental hygiene

Students interested in the pre-health major in dental hygiene must complete the two-year program requirements (a total minimum of 60 credits) for application to the Bachelor of Science degree program in dental hygiene offered by the VCU School of Dentistry. Applications to the program are normally submitted in spring of the sophomore year. Students planning to start the program in the fall would begin the admissions process during the fall semester of the preceding year. Students apply to the baccalaureate program through the American Dental Education Association Dental Hygiene Centralized Application Service in the spring of the year preceding entrance. All prerequisite course work should be completed by the spring of the year of desired admission.

Completion of the pre-health major in dental hygiene does not guarantee admission to the junior- and senior-year program for the B.S. in Dental Hygiene nor does it result in a college degree. Students must be admitted to and complete all program requirements to earn a baccalaureate degree in dental hygiene. Admission into the program is based on both academic and nonacademic qualities (work ethic, knowledge of the profession, motivation, compassion, integrity, communication skills, leadership and desire to contribute to society, resiliency, willingness to accept responsibility, and maturity). Students are strongly encouraged to consult with a UAA pre-health major academic adviser to learn about admission requirements that are specific to the program and to speak about alternate/parallel majors. For more information about the admission requirements and application deadlines for the B.S. in Dental Hygiene, visit the program's website (<http://www.dentistry.vcu.edu/programs/dentalhygiene/admission/>).

Requirements for the pre-health major in dental hygiene

Students in the pre-health major in dental hygiene must complete the specific prerequisite courses outlined below, totaling a minimum 60 credit hours. The Dental Hygiene Program does not accept grades of D and

all courses taken (repeated) are factored into the GPA. Science courses must be completed within six years of matriculation. The Dental Hygiene Program requires any applicant whose native language is not English and who has been educated primarily outside of the United States to submit official Test of English as a Foreign Language or International English Language Testing System scores.

Students interested in the pre-health major in dental hygiene must complete biological concepts and laboratory, human anatomy (laboratory included), human physiology and laboratory, medical microbiology and laboratory, and general chemistry I and laboratory. The non-science prerequisites for the pre-health major are: English composition (UNIV 111, UNIV 112 and UNIV 200), statistics, introduction to psychology, introduction to sociology, effective speech, a visual or performing arts course, humanities elective, and elective courses to complete the 60 credit-hour requirement needed to enroll in the dental hygiene degree program. DENS 101, although not required, is highly recommended.

The remainder of the 60 required credits should be chosen to fulfill VCU's general education curriculum.

Following a review of admissions credentials, eligible and competitive applicants will require an interview with the admissions committee. The department will contact the student/applicant to schedule the interview. Applicants are notified of committee decisions at the earliest possible date.

Changing to the pre-health major in dental hygiene from another major

Current VCU students who wish to change their major to the pre-health major in dental hygiene must meet the following criteria to be considered for the major:

- Minimum GPA of 2.8
- No more than 75 credits completed

Students who do not meet these requirements may see a pre-health adviser, but they will not be assigned to a pre-health adviser in Navigate.

Progression policy

Students interested in pursuing the B.S. in Dental Hygiene are admitted initially into the pre-health major in dental hygiene, which is not a degree-granting major. In order to remain in the pre-dental hygiene program, students must meet the following criteria.

- Students must maintain a minimum 2.8 VCU cumulative GPA.
 - If a student's VCU cumulative GPA drops below 2.8, they will be placed on pre-health probation and allowed one semester to raise their cumulative GPA to a 2.8 — provided it is mathematically possible to do so. If it is not mathematically possible to do so, or if the student fails to raise their minimum cumulative GPA to 2.8 during their probationary semester, they will be removed from the pre-dental hygiene major and transitioned into their secondary major. If no secondary major exists, students will be moved into the Discovery program (Undeclared major) where they will receive assistance with selecting another major.
- Pre-health probation students: Students must meet with their pre-health adviser prior to the add/drop deadline of the pursuant semester in order to adjust their class schedule and to create an **action plan**.

- By the time a student has attempted¹ 60 credits, if they have not successfully matriculated to the dental hygiene major, they must declare a secondary major related to their parallel plan.
- If a student exceeds 75 attempted¹ credits and has not successfully matriculated to the dental hygiene major, they will be removed from the pre-dental hygiene major and their secondary major will become their primary major.

Details of special requirements for admission to the dental hygiene program can be found on the degree requirements tab of the dental hygiene program (<http://bulletin.vcu.edu/undergraduate/dentistry/dental-hygiene-program/dental-hygiene-bs/#degreerequirementstext>) page of this Bulletin.

Transfer students who are admitted to the pre-health major in dental hygiene must apply to the B.S. in Dental Hygiene degree program following the minimum number of semesters needed to complete the prerequisite courses required for admission. Transfer students must adhere to the same guidelines outlined above (re: declaring secondary majors, developing action plans, etc.).

Students may appeal the removal from the pre-health major in dental hygiene via the associate director of pre-health advising in University Academic Advising. Students must initiate the appeal with their assigned academic adviser in UAA. The associate director may, at his or her discretion, extend the time period needed to meet the requirements, generally by only one semester. A student who wishes to appeal must submit his or her appeal at least one week prior to the start of the next semester in which they register for classes.

1

Attempted hours include credit hours from courses in which a W, an F or any other grade has been assigned. This is reported in the transcript as "overall attempted hours."

Prerequisites for the dental hygiene program

Course	Title	Hours
VCU courses		
Select one of the following biology sequences (Note the three-credit lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.):		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I ¹	
BIOL 205	Basic Human Anatomy	4
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ²	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4

SPCH 121 or BUSN 225	Effective Speech Winning Presentations	3
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations) ³	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Humanities/fine arts elective		3
Visual or performing arts ⁴		3
Electives to reach the 60-credit minimum requirement for entrance into the program and completion of VCU's general education curriculum		12
Total Hours		60

1

The prerequisite for BIOL 151 and BIOZ 151 is MATH 141 (<http://bulletin.vcu.edu/search/?P=MATH%20141>), MATH 151 (<http://bulletin.vcu.edu/search/?P=MATH%20151>), MATH 200 (<http://bulletin.vcu.edu/search/?P=MATH%20200>), MATH 201 (<http://bulletin.vcu.edu/search/?P=MATH%20201>) or a satisfactory score on the math placement exam; and CHEM 100 (<http://bulletin.vcu.edu/search/?P=CHEM%20100>) with a minimum grade of B, CHEM 101 (<http://bulletin.vcu.edu/search/?P=CHEM%20101>) with a minimum grade of C or a satisfactory score on the chemistry placement exam.

2

The prerequisite for CHEM 101 is CHEM 100 with a minimum grade of C or high school chemistry and a satisfactory combination of math SAT score and high school GPA. The math pre- or corequisite is MATH 151 (precalculus). CHEM 100 and MATH 151 can be used to count toward the elective requirements.

3

The prerequisite for STAT 210 is MATH 131, MATH 141, MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course.

4

Any course that has an art or music designation, including art history and music appreciation

The minimum number of credit hours required (for admission to dental hygiene program) is 60.

Sample curriculum outline

Freshman year

Fall semester		Hours
Select one of the following biology sequences: ¹		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15

Spring semester

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
SOCY 101	Introduction to Sociology (satisfies general education AOI for diversities in the human experience)	3
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Term Hours:		17

Sophomore year

Fall semester		Hours
BIOL 205	Basic Human Anatomy	4
SPCH 121	Effective Speech	3
or	or Winning Presentations	
BUSN 225		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Visual or performing arts		3
Term Hours:		13
Spring semester		Hours
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4

Humanities/fine arts elective	3
Electives to reach the 60-credit minimum requirement for entrance into the program and completion of VCU's general education curriculum	8
Term Hours:	15
Total Hours:	60

¹

The three-credit lecture component satisfies general education AOI for scientific and logical reasoning.

The minimum number of credit hours required (for admission to dental hygiene program) is 60.

Pre-health major in medical laboratory sciences

Students interested in the pre-health major in medical laboratory sciences must complete the two-year program requirements (a total minimum of 60 credits) for application to the Bachelor of Science degree program in medical laboratory sciences offered by the College of Health Professions. Applications to the program are normally submitted in spring of the sophomore year. Students planning to start the program in the fall would begin the admissions process during the fall semester of the preceding year. Students apply to the baccalaureate program through Undergraduate Admissions in the spring of the year preceding entrance. All prerequisite course work should be completed by the summer of the year of desired admission.

Completion of the pre-health major in medical laboratory sciences does not guarantee admission to the junior- and senior-year program for the B.S. in Medical Laboratory Sciences nor does it result in a college degree. Students must be admitted to and complete the baccalaureate program to earn a B.S. degree in medical laboratory sciences. Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee. Students are strongly encouraged to consult with a UAA pre-health major academic adviser to learn about admission requirements that are specific to the program and to speak about alternate/parallel majors. For more information about the admission requirements for the B.S. in Medical Laboratory Sciences, visit the department's website (https://chp.vcu.edu/programs/#degree_279017).

Requirements for the pre-health major in medical laboratory sciences

Students in the pre-health major in medical laboratory sciences must complete 12 credits of biology to include biological concepts or introduction to biological sciences (both with laboratories), 12 credits of chemistry to include a two-semester sequence of general chemistry (both with laboratories) and organic chemistry with laboratory or quantitative analysis with laboratory, nine credits of English composition (UNIV 111, UNIV 112 and UNIV 200), pre-calculus mathematics (three credits), and electives to meet the 60 minimum credits requirement for entrance into the medical laboratory sciences program and to complete VCU's general education curriculum.

In addition to the academic requirements, there are "essential functions" (non-academic) of the medical laboratory sciences program that students must master to successfully participate in the program. The following is a list of the essential technical abilities and skills for

admission that applicants must possess: manual dexterity, fine motor skills, mobility, vision, hearing, the ability to verbally communicate, read and write in the English language, emotional stability, and (other) personal attributes including integrity, responsibility, tolerance and respect. Although not required, introduction to medical laboratory sciences, additional mathematics, biology or chemistry courses, and a physics course are highly recommended.

Following a review of admissions credentials, eligible applicants will require an interview with the admissions committee. The department will contact the student/applicant to schedule the interview. Applicants are notified of committee decisions at the earliest possible date.

Changing to the pre-health major in medical laboratory sciences from another major

Current VCU students who wish to change their major to the pre-health major in clinical laboratory sciences must meet the following criteria to be considered for the major:

- Minimum GPA of 2.5
- No more than 75 credits completed

Students who do not meet these requirements may see a pre-health adviser, but they will not be assigned to a pre-health adviser in Navigate.

Progression policy

Students interested in pursuing the B.S. in Medical Laboratory Sciences are admitted initially into the pre-health major in medical laboratory sciences, which is not a degree-granting major. In order to remain in the pre-medical laboratory sciences program, students must meet the following criteria.

- Students must maintain a minimum 2.5 VCU cumulative GPA.
 - If a student's VCU cumulative GPA drops below 2.5, they will be placed on pre-health probation and allowed one semester to raise their cumulative GPA to 2.5 – provided it is mathematically possible to do so. If it is not mathematically possible to do so, or if the student fails to raise their minimum cumulative GPA to 2.5 during their probationary semester, they will be removed from the pre-medical laboratory sciences major and transitioned into their secondary major. If no secondary major exists, students will be moved into the Discovery program (undeclared major) where they will receive assistance with selecting another major.
- Pre-health probation students: Students must meet with their pre-health adviser prior to the add/drop deadline of the pursuant semester in order to adjust their class schedule and to create an **action plan**.
- By the time a student has attempted¹ 60 credits, if they have not successfully matriculated into the medical laboratory sciences major, they must declare a secondary major related to their parallel plan.
- If a student exceeds 75 attempted¹ credits and has not successfully matriculated into the medical laboratory sciences major, they will be removed from the pre-medical laboratory sciences major and their secondary major will become their primary major.

Details of special requirements for admission to the medical laboratory sciences program can be found on the **degree requirements tab of the B.S. in Medical Laboratory Sciences page** of this Bulletin.

Transfer students who are admitted to the pre-health major in medical laboratory sciences must apply to the B.S. in Medical

Laboratory Sciences degree program following the minimum number of semesters needed to complete the prerequisite courses required for admission. Transfer students must adhere to the same guidelines outlined above (re: declaring secondary majors, developing action plans, etc.).

Students may appeal the removal from the pre-health major in medical laboratory sciences via the associate director of pre-health advising in University Academic Advising. Students must initiate the appeal with their assigned academic adviser. The associate director may, at their discretion, extend the time period needed to meet the requirements, generally by only one semester. A student who wishes to appeal must submit his or her appeal at least one week prior to the start of the next semester in which they register for classes.

1

Attempted hours include credit hours from courses in which a W, an F or any other grade has been assigned. This is reported in the transcript as "overall attempted hours."

Prerequisites for the medical laboratory sciences program

Course	Title	Hours
VCU courses		
Select one of the following biology sequences (Note the three-credit lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.):		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Additional biology credits		8
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
BIOL 205	Basic Human Anatomy	
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	
BIOL 300	Cellular and Molecular Biology	
BIOL 303	Microbiology	
BIOL 310	Genetics	
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	
Introductory chemistry sequence		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
Select one of the following chemistry sequences:		5
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	

MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Electives to reach the 60-credit minimum requirement for entrance into the program and completion of VCU's general education curriculum		22
Total Hours		60

The minimum number of credit hours required (for admission to medical laboratory sciences program) is 60.

Sample curriculum outline

Freshman year

		Hours
Fall semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 191	Student Success Special Topics	1
General education course		3
Term Hours:		15

Spring semester

Select one of the following biology sequences: ¹		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
OR		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CLLS 201	Introduction to Clinical Laboratory Science	1
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15

Sophomore year

Fall semester		
Select one of the following sequences:		5
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	-
OR		
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	-
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Additional biology course and laboratory		4
General education course		3
Term Hours:		15
Spring semester		
Additional biology course and laboratory		4
Electives to reach the 60-credit minimum requirement for entrance into the program and completion of VCU's general education curriculum		11
Term Hours:		15
Total Hours:		60

1

The three-credit lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.

The minimum number of credit hours required (for admission to medical laboratory sciences program) is 60.

Pre-health major in nursing

Students interested in the highly competitive nursing program must complete the pre-health major in nursing requirements prior to application. A total minimum of 26 credits is required for application to the traditional Bachelor of Science in Nursing degree program. A minimum cumulative GPA is also required. Applicants who are international or non-native English speakers without a degree from a U.S. high school, college or university must submit TOEFL or IELTS test scores. For more information about these requirements, visit the School of Nursing's website (<http://nursing.vcu.edu>).

Because admission to the B.S. in Nursing program is highly competitive, it is imperative that all pre-health students who intend to pursue a major in nursing work in tandem with their UAA pre-health major academic adviser to consider parallel majors that satisfy similar career outcomes. Completion of the pre-health major in nursing does not guarantee admission to the traditional program for the B.S. in Nursing nor does it result in a college degree.

Requirements for the pre-health major in nursing

Students applying to the traditional B.S. in Nursing degree program must complete biological concepts with laboratory, human anatomy (lab included) with a minimum grade of B, and principles of nutrition. The non-science prerequisites for the pre-health major in nursing are: UNIV 111 and UNIV 112, introduction to psychology and general sociology. Although math is not required for admission to the School of Nursing, students admitted into the nursing program complete a statistics class. Therefore, it is recommended that students who place into college algebra complete a math class during the first year.

While not a requirement of the pre-health major in nursing, students who have space in their schedules to accommodate additional classes are encouraged to begin working on the collateral requirements of the baccalaureate degree. These courses include: BIOL 209 and BIOZ 209, both with minimum grades of B; PHIL 201; PHIS 206 and PHIZ 206, both with minimum grades of B; PSYC 304; STAT 208 or higher; and UNIV 200.

Changing to the pre-health major in nursing from another major

Current VCU students who wish to change their major to the pre-health major in nursing must meet the following criteria to be considered for the major:

- Minimum GPA of 3.0
- No more than 75 credits completed

Students who do not meet these requirements may see a pre-health adviser, but they will not be assigned to a pre-health adviser in Navigate.

Progression policy

Students interested in pursuing the B.S. in Nursing are admitted initially into the pre-health major in nursing, which is not a degree-granting major. In order to remain in the pre-nursing program, students must meet the following criteria.

- Students must maintain a minimum 3.0 VCU cumulative GPA.
 - If a student's VCU cumulative GPA drops below 3.0, they will be placed on pre-health probation and allowed one semester to raise their cumulative GPA to 3.0 – provided it is mathematically possible to do so. If it is not mathematically possible to do so, or if the student fails to raise their minimum cumulative GPA to 3.0 during their probationary semester, they will be removed from the pre-nursing major and transitioned into their secondary major. If no secondary major exists, students will be moved into the Discovery program (undeclared major) where they will receive assistance with selecting another major.
- Pre-health probation students: Students must meet with their pre-health adviser prior to the add/drop deadline of the pursuant semester in order to adjust their class schedule and to create an **action plan**.
- By the time a student has attempted¹ 45 credits, if they have not successfully matriculated into the traditional B.S. in Nursing program, they must declare a secondary major related to their parallel plan.
- By the time a student has attempted 60 credits, they must have completed BIOL 205 (or its equivalent) with a minimum grade of B.
- If a student exceeds 75 attempted¹ credits and has not successfully matriculated into the traditional B.S. in Nursing program, they will be removed from the pre-nursing major and their secondary major will become their primary major.

Details of requirements for admission to the traditional nursing program can be found on the program admission tab of the traditional program concentration page (p. 573) of this Bulletin.

Transfer students who are admitted to the pre-health major in nursing must apply to the traditional program option of the B.S. in Nursing following the minimum number of semesters needed to complete the prerequisite courses required for admission. Transfer students must adhere to the same guidelines outlined above (re: declaring secondary majors, developing action plans, etc.). Transfer students who have exceptionally high credits are strongly encouraged to consider applying

to the **accelerated program**, which is a post-baccalaureate B.S. degree option.

Students may appeal the removal from the pre-health major in nursing via the associate director of pre-health advising in University Academic Advising. Students must initiate the appeal with their assigned academic adviser. The associate director may, at their discretion, extend the time period needed to meet the requirements, generally by only one semester. A student who wishes to appeal must submit their appeal at least one week prior to the start of the next semester in which they register for classes.

1

Attempted hours include credit hours from courses in which a W, an F or any other grade has been assigned. This is reported in the transcript as "overall attempted hours."

Prerequisites for the traditional nursing program

Course	Title	Hours
VCU courses		
Select one of the following biology sequences (Note the three-credit lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.):		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course		3
Total Hours		27

Sample curriculum outline

Freshman year	Hours
Fall semester	
Select one of the following biology sequences: ¹	4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I

PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 191	Student Success Special Topics (recommended)	1
General education course		3
Term Hours:		15
Spring semester		
BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
SOCY 101	Introduction to Sociology (satisfies general education AOI for diversities in the human experience)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Term Hours:		13
Total Hours:		28

1

The three-credit lecture component satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning.

The total minimum requirement (for admission to the traditional nursing program) is 26 credits.

Pre-health and pre-law advising tracks

The Office of Pre-Professional Health Advising in University Academic Advising prepares students for professional school application through guidance with pre-professional health curriculum, admissions test preparation, co-curricular activity involvement and application competitiveness. The advising and services provided by the office will prepare highly qualified, confident and knowledgeable pre-professional health students for admission to professional health programs. Preparatory programs are available for careers in medicine, dentistry, occupational therapy, optometry, pharmacy, physical therapy, physician assistant and veterinary medicine. Additionally, a post-baccalaureate health sciences certificate (p. 218) is available to students who have already earned bachelor's degrees in non-science areas and plan to enter doctoral-level health science training programs.

The office focuses on developing personal and professional competencies which are heralded by the Association of American Medical Colleges (<https://www.aamc.org/>). VCU's pre-professional health advising tracks are not an academic major or minor, but are rather a combination of career development advising coupled with a set of predetermined courses that are widely accepted across the nation for

admission requirements. To qualify for and to maintain your status as a "pre-professional health" student at VCU, program requirements are outlined for each student to follow in order to gain access to the benefits of the pre-professional health advising program.

For more information about how to declare and maintain your pre-professional health advising track, please visit the pre-professional health advising (<https://uaa.vcu.edu/preprofessionalhealth/>) webpage.

Pre-law advising program

VCU Career Services (<http://www.careers.vcu.edu/>) supports aspiring law students by offering career advisory services regarding the law school admissions process. Students are offered assistance regarding application procedures and the law school admission test in preparation for the study of law. The Law School Admission Council (<http://www.LSAC.org>) and the American Bar Association (<http://www.ABA.net.org>) provide comprehensive online information for students regarding preparation for law school, law school admission and accreditation, as well as careers in the legal profession.

As there are no particular prerequisites or a specific major necessary for entrance to law school, students may choose virtually any major or undergraduate program. Traditionally, students applying to law school have pursued liberal arts majors such as history, English, political science, economics, math/sciences or philosophy. Students wishing to specialize in a particular area of law may choose majors from academic disciplines as diverse as art, music, computer science, engineering, nursing, education, business or social work. Taking a broad range of difficult courses from demanding instructors is excellent preparation for a legal education. Whatever the major, it is important that students considering a career in law take advantage of opportunities to develop research and writing skills. Other skills that provide a sound foundation for a legal education include analytical and problem-solving skills, critical reading abilities, oral communication and listening abilities, task organization and management skills, and the values of serving faithfully the interests of others while also promoting justice.

The Department of Philosophy offers a philosophy of law minor for students interested in law school. It is important that students considering the legal profession take challenging course work in which they can develop analytical, research and written and verbal communication skills.

Preparation for the study of dentistry

Important general information

Students interested in the pre-dental advising track must complete a minimum of 90 credit hours including the listed prerequisite courses and be on track to receive a baccalaureate degree to be considered for admission to dental school. Students interested in dental school should consult with a pre-professional health adviser to learn about requirements that are specific to the schools of dentistry to which they hope to apply.

Declaration of the pre-dental advising track through the Office of Pre-Professional Health Advising does not constitute admission to the VCU School of Dentistry. Students must apply separately to the dental school of their choice at the appropriate time.

Students with an interest in preparing for dental school must declare an academic major and should declare and maintain their pre-dental advising track. Students do not earn a pre-dental degree. Students unsure

of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-dental students are encouraged to major in fields of greatest interest to them. To declare a pre-dentistry advising track, see the pre-professional health advising blog (<https://rampages.us/preprofadv/>).

Prerequisites for the VCU School of Dentistry

Students need to complete the prerequisite science courses before being eligible to start the dental program at the VCU School of Dentistry. Students are also required to complete the Dental Admission Test. The DAT is taken before or during the dental school admissions process. Students preparing for the DAT are strongly advised to take courses to build competency in tested subjects prior to taking the exam. Completing all prerequisite course work and taking the DAT prior to applying is highly recommended but not required. Students must provide official DAT scores before their application will be considered for an interview. All prerequisite courses must be completed with a minimum grade of C prior to entering VCU's dental program if accepted.

Science and non-science courses required for the VCU School of Dentistry

General biology, general chemistry, organic chemistry, biochemistry and physics are required science prerequisites for admission to dental school. With the exception of biochemistry, the laboratory component of these prerequisites must also be completed.

English composition and a mathematics/statistics course are non-science prerequisites required for dental school.

Other upper-level science courses in general microbiology, bacteriology, animal or vertebrate physiology, anatomy, genetics and cell biology are strongly recommended. If time permits and the courses are available, courses in immunology, embryology, or developmental biology and histology are highly recommended. Additionally, non-science courses in the behavioral sciences and those involving psychomotor skills are recommended.

Prerequisites for the VCU School of Dentistry

Course	Title	Hours
VCU courses		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 151	Precalculus Mathematics ¹	3-4
or MATH 131	Introduction to Contemporary Mathematics	
or MATH 141	Algebra with Applications	
or MATH 200	Calculus with Analytic Geometry I	

or STAT 210	Basic Practice of Statistics	
or STAT 212	Concepts of Statistics	
or STAT 314	Applications of Statistics	
PHYS 201	General Physics I ²	4-5
or PHYS 207	University Physics I	
PHYS 202	General Physics II ³	4-5
or PHYS 208	University Physics II	
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
Total Hours		46-49

1

MATH 151 is highly recommended and is a prerequisite for other dental school course requirements.

2

MATH 200 is a prerequisite for PHYS 207.

3

MATH 201 is a prerequisite for PHYS 208.

Additional recommended prerequisites for dental schools nationwide

Dental schools across the U.S. have different prerequisites for admission into their program. The list below shows courses required by various schools beyond the courses listed above for the VCU School of Dentistry. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOL 205	Basic Human Anatomy	4
or BIOL 402	Comparative Vertebrate Anatomy	
BIOL 303	Microbiology	3
DENS 101	Introduction to Dentistry	1
PHIS 206	Human Physiology	3
or BIOL 411	Physiology	
UNIV 291	University Special Topics (when topic is appropriate for pre-professional health students)	1-4

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for the study of medicine

Important general information

Students interested in the pre-medicine advising track must obtain a bachelor's degree and complete the necessary prerequisites for medical school. All prerequisites should be completed or on track to be complete prior to medical school matriculation. Best results occur when all prerequisite courses have been taken and grades are available at the time of application. Students interested in medical school should consult with

a pre-professional health adviser to learn about requirements that are specific to the schools of medicine to which they hope to apply.

Declaration of a pre-medical advising track through the Office of Pre-Professional Health Advising does not constitute admission to the VCU School of Medicine. Students must apply separately to the medical school of their choice at the appropriate time.

Students with an interest in preparing for medical school must declare an academic major and should declare and maintain their pre-medical advising track. Students do not earn a pre-medical degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their primary/major academic adviser. Pre-medical students are encouraged to major in fields of greatest interest to them. To declare a pre-medicine advising track, see the pre-professional health advising blog.

Beyond curricular requirements, students must obtain additional experiences to be a competitive applicant for the VCU School of Medicine. Successful applicants have an average of 200 hours of clinical exposure, interacting with both physicians (>60 hours) and patients. Non-clinical community service that demonstrates their passion for serving others over an extended amount of time is required; 200 hours is the average. Students should be knowledgeable about how their clinical exposure and community service has impacted their motivation to study medicine and be successful in the classroom. It is also helpful to the applicant but not mandatory to have research and leadership experience.

Prerequisites for the VCU School of Medicine

The American Association of Medical Colleges recommends students gain a core set of competencies in preparation for the Medical College Admissions Test. The MCAT is taken prior to students applying to medical school and results are weighed heavily in admissions decisions. Best results on the MCAT occur when all prerequisites have been taken prior to sitting for the MCAT exam. Please see the AAMC website (<https://www.aamc.org/>) for more information regarding MCAT content.

Science and non-science prerequisite courses required for the VCU School of Medicine

Science prerequisite course work that students must complete for VCU School of Medicine are general biology, general chemistry, organic chemistry and physics (eight credits each). Another upper-level biological science course is also required. Courses include but are limited to biochemistry, cell biology, anatomy, embryology, genetics, microbiology, molecular biology, immunology or neuroscience.

In addition to the prerequisites listed above, VCU's School of Medicine requires pre-medical students to take two semesters of English composition and two semesters of mathematics (general statistics can count as one semester). All students also must have clinical exposure to physicians and patients and must have community-based nonclinical community service.

The VCU School of Medicine does not require introductory psychology or sociology as prerequisites, but they are highly recommended. Biochemistry, introductory psychology and introductory sociology are topics covered on the MCAT and are prerequisites for some medical schools.

VCU's School of Medicine does accept AP and CLEP credit to meet pre-medical course requirements if these are documented on an official transcript. Please note that lab credit will still be required and applicants may meet lab credit with the lab sections of advanced science courses

or practical experience, such as documented relevant experience in a research lab.

Additional resources

VCU offers an introduction to medicine course (offered as a topic under UNIV 291) every spring semester, which is focused on the VCU medical school application process with insight into medical career choices. Students should see their pre-professional health adviser for additional details.

For more information about the VCU School of Medicine (<https://medschool.vcu.edu/>), visit their website.

Prerequisites for the VCU School of Medicine

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL electives (upper-level) ¹		3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302 or CHEM 403	Organic Chemistry and Organic Chemistry Laboratory II Biochemistry I	5
MATH 151	Precalculus Mathematics	4
PHYS 201 or PHYS 207	General Physics I ² University Physics I	4-5
PHYS 202 or PHYS 208	General Physics II ³ University Physics II	4-5
STAT 210	Basic Practice of Statistics	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
Total Hours		50-52

1

Recommended upper-level biology electives include biochemistry, cell biology, anatomy, embryology, genetics, microbiology, molecular biology, immunology or neuroscience.

2

MATH 200 is a prerequisite for PHYS 207.

3

MATH 201 is a prerequisite for PHYS 208.

Additional recommended prerequisites for medical schools nationwide

Medical schools across the U.S. have different prerequisites for admission. The list below shows courses required by various schools beyond the courses listed above for the VCU School of Medicine. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOL 300	Cellular and Molecular Biology	3
BIOL 303	Microbiology	3
BIOL 310 & BIOZ 310	Genetics and Laboratory in Genetics	5
CHEM 403	Biochemistry I	3
MATH 200 or SCMA 212	Calculus with Analytic Geometry I Differential Calculus and Optimization for Business	3-4
PHIL 201	Introduction to Ethics	3
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology	3

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for the study of occupational therapy

Important general information

Students interested in the pre-occupational therapy advising track must obtain a bachelor's degree and complete the necessary prerequisites for the occupational therapy doctorate program. Students interested in occupational therapy should consult with a pre-professional health adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Declaration of the pre-occupational therapy advising track through the Office of Pre-Professional Health Advising does not constitute admission to the occupational therapy doctorate program in VCU's College of Health Professions. Students must apply separately to the occupational therapy program/school of their choice at the appropriate time.

Students with an interest in preparing for the occupational therapy doctorate program must declare an academic major and should declare and maintain their pre-occupational therapy advising track. Students do not earn a pre-occupational therapy degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Those in the pre-occupational therapy advising track are encouraged to major in fields of greatest interest to them. To declare a pre-occupational therapy advising track, see the pre-professional health advising blog (<https://rampages.us/preprofadv/>).

Prerequisites for the VCU occupational therapy doctorate program

Students intending to enroll in the VCU occupational therapy doctorate program must complete a bachelor's degree before entering, as well as declaring and maintaining their pre-occupational therapy advising track. It is recommended that applicants select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of the occupational therapy program.

Students need to complete the prerequisite courses and the Graduate Record Exam before becoming eligible to start the occupational therapy program in the College of Health Professions at VCU.

In addition to completing the required courses, applicants must also demonstrate evidence of a minimum of 30 observation hours under the supervision of a licensed O.T. practitioner, an occupational therapist or an occupational therapy assistant, prior to the time of application.

Prerequisite courses required for the VCU occupational therapy doctorate program

Students must complete human anatomy (including the lab) as well as human physiology and the human physiology laboratory. A minimum grade of B is a requirement for these prerequisite courses. An introductory-level biology course is a prerequisite for anatomy and physiology at VCU.

Statistics is a prerequisite course. The course should cover the following topics: descriptive statistics, t-test, chi-square, analysis of variance, linear regression and correlational analysis.

A total of 15 social science credits are needed. Psychology of the abnormal, lifespan developmental psychology and at least one sociology or anthropology course is required. The additional six social science credits must be taken within the psychology, sociology or anthropology departments. Introductory courses are acceptable to fulfill the social science prerequisites.

Anatomy, physiology, statistics, developmental psychology and abnormal psychology should be taken within seven years of enrollment in the program.

A medical terminology course and a kinesiology course are recommended but not required.

Prerequisites for the VCU Occupational Therapy Doctorate program

Course	Title	Hours
VCU courses ¹		
ANTH 103 or SOCY 101	Introduction to Anthropology Introduction to Sociology	3
BIOL 205	Basic Human Anatomy (includes lab)	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304	Life Span Developmental Psychology	3
PSYC 407	Psychology of the Abnormal	3
STAT 314	Applications of Statistics ^{2,3}	4
Social sciences electives (from PSYC, ANTH and/or SOCY)		3-6
Total Hours		24-27

1

Note that some courses require prerequisites to the listed required courses and have been added to the “additional recommended prerequisite courses” list below.

2

Depending on the math placement test results, students may need to complete MATH 151, MATH 200 or MATH 201 and STAT 212 before enrolling in STAT 314.

3

VCU psychology majors can take PSYC 214 in place of STAT 314 (STAT 210 is a prerequisite for PSYC 214).

Additional recommended prerequisites for occupational therapy schools nationwide

Occupational therapy programs across the U.S. have different prerequisites for admission. The list below shows courses required by various schools beyond the courses listed above for the VCU occupational therapy program requirements. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
HPEX 250	Medical Terminology	1-3
PHYS 201	General Physics I	4
PHIL 201	Introduction to Ethics	3
SPCH 121 or SPCH 321	Effective Speech Speech for Business and the Professions	3

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for professional studies in optometry

Important general information

Students interested in the pre-optometry advising track must obtain a bachelor's degree and complete the necessary prerequisites for a Doctor of Optometry program. Those interested in pursuing optometry should consult with a pre-professional health adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Admission to and completion of a pre-optometry advising track does not constitute or guarantee admission to an optometry school.

If interested in preparing for optometry school, students must declare an academic major and should declare and maintain their pre-optometry advising track. Students do not earn a pre-optometry degree. Those unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-

optometry students are encouraged to major in fields of greatest interest to them. To declare a pre-optometry advising track, see the [pre-professional health advising blog](#).

Prerequisites for an optometry program

It is recommended that students select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of an optometry program.

Students need to complete their bachelor's degree, the required science prerequisite courses and the Optometry Admissions Test before becoming eligible to start an optometry program.

Science and non-science courses required for the pre-optometry doctoral program

General biology, cell biology, general chemistry, organic chemistry, biochemistry and physics are required science prerequisites for admission to optometry school. The science courses should be pre-professional level courses designed for science majors or health professional students and should offer laboratory experience. Eight hours of advanced human biological sciences are required; junior or senior-level anatomy or physiology is strongly recommended. Students should consult with a pre-professional health adviser to see if the school they plan to apply to requires human anatomy.

General prerequisites for Doctor of Optometry programs

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 205	Basic Human Anatomy	4
BIOL 303	Microbiology	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 151	Precalculus Mathematics	4
MATH 200	Calculus with Analytic Geometry I	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory ⁴	4
PHYS 201 or PHYS 207	General Physics I ¹ University Physics I	4-5
PHYS 202 or PHYS 208	General Physics II ² University Physics II	4-5
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology ³	4

STAT 210	Basic Practice of Statistics	3
Total Hours		63-65

1

MATH 200 is a prerequisite for PHYS 207.

2

MATH 201 is a prerequisite for PHYS 208.

3

Students should visit the prospective school's website to confirm if BIOL 205 is required.

4

Students should visit the prospective school's website to confirm if PHIS 206 is required.

Students are encouraged to review admissions requirements for the specific institution(s) that they are considering applying to as well as VCU course descriptions for prerequisite courses. Students should meet with a pre-professional health adviser after declaring the track to develop their curriculum plan.

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for the study of pharmacy

Important general information

Students interested in the pre-pharmacy advising track must complete the necessary prerequisites for pharmacy school. The minimum credit requirement varies for each pharmacy school. VCU requires a total minimum of 56 semester hours, however some students elect to earn a baccalaureate degree before entering the program. Students interested in pharmacy school should consult with a pre-professional health adviser to learn about requirements that are specific to the schools of pharmacy to which they hope to apply.

Declaration of the pre-pharmacy advising track through the Office of Pre-Professional Health Advising does not constitute admission to the VCU School of Pharmacy. Students must apply separately to the pharmacy school of their choice at the appropriate time.

Students with an interest in preparing for pharmacy school must declare an academic major and should declare and maintain their pre-pharmacy advising track. Students do not earn a pre-pharmacy degree. Those unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-pharmacy students are encouraged to major in fields of greatest interest to them. To declare a pre-pharmacy advising track, see the **pre-professional health advising blog**.

Prerequisites for the VCU Pharm.D. program

Students must complete the minimum 56 semester hours of course work and the required science courses to be eligible to start the Pharm.D. program at VCU. However, some students elect to complete their bachelor's degree prior to enrollment into the Pharm.D. program. Students are also required to complete the Pharmacy College Admission Test. The PCAT is taken prior to students applying to pharmacy school

and results are utilized as a component of the holistic admissions review process. Students preparing for the PCAT are strongly advised to take courses to build competency in these areas prior to taking the exam. It is not necessary to have completed all prerequisite course work or to have taken the PCAT prior to submitting your application to pharmacy school. However, you must complete all prerequisite courses and take the PCAT before entering VCU's pharmacy program.

Science and non-science courses required for the VCU Pharm.D. program

General biology, general chemistry, organic chemistry, physics, human anatomy, human physiology, microbiology and biochemistry are required science prerequisites for admission to the VCU Pharm.D. program.

Students must also complete English composition, calculus and statistics as non-science prerequisites for the VCU Pharm.D. program.

Due to the importance of a strong biomedical science foundation for success in the Pharm.D. program, some or all of these courses are highly recommended: genetics, molecular biology, immunology and cell biology. Other highly recommended elective choices are computer science, economics, business, history, foreign languages, philosophy, political science and sociology.

The following prerequisite courses must be completed prior to admission for students entering in the fall semester. Advanced Placement tests of the College Board and/or International Baccalaureate courses will not be accepted for science prerequisites other than physics, although higher-level courses in the same subject area may be substituted (e.g., physical chemistry for general chemistry). AP/IB credit in physics, calculus and statistics courses will be accepted with a minimum score of 3 for AP or 4 for IB.

Prerequisites for VCU's Pharm.D. program

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 205	Basic Human Anatomy	4
BIOL 303	Microbiology	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 200	Calculus with Analytic Geometry I	4
PHIS 206	Human Physiology	3
PHYS 201 or PHYS 207	General Physics I University Physics I	4-5
STAT 210	Basic Practice of Statistics	3

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3

Total Hours 56-57

1

Due to the importance of a strong biomedical science foundation in the Pharm.D. program, some or all of these courses are highly recommended: genetics, molecular biology, immunology and cell biology. Recommended elective choices are computer science, economics, business, history, foreign languages, philosophy, political science and sociology.

Additional recommended prerequisites for pharmacy schools nationwide

Pharm.D. programs across the U.S. have different prerequisites for admission. The list below shows courses required by various schools beyond the courses listed above for the VCU Pharm.D. program requirements. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOZ 303	Microbiology Laboratory	2
ECON 210 or ECON 211	Principles of Microeconomics Principles of Macroeconomics	3
PHIL 201	Introduction to Ethics	3
PHIZ 206	Human Physiology Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology	3

Additional arts and humanities/social and behavioral sciences course work

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for the study of physical therapy

Important general information

Students interested in the pre-physical therapy advising track must obtain a bachelor's degree and complete the necessary prerequisites for the Doctor of Physical Therapy program. Students interested in physical therapy should consult with a pre-professional health adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Declaration of the pre-physical therapy advising track through the Office of Pre-Professional Health Advising does not constitute admission to the

VCU D.P.T. program in the College of Health Professions. Students must apply separately to the physical therapy program/school of their choice at the appropriate time.

Students with an interest in preparing for the physical therapy doctoral program must declare an academic major and should declare and maintain their pre-physical therapy advising track. Students do not earn a pre-physical therapy degree. Those unsure of their academic major initially should clarify their academic interests through regular conversations with their advisers. Students in the pre-physical therapy advising track are encouraged to major in fields of greatest interest to them. To declare a pre-physical therapy advising track, see the **pre-professional health advising blog**.

Prerequisites for the VCU physical therapy doctoral program

Students intending to pursue the physical therapy doctoral program must complete a bachelor's degree before entering. It is recommended that applicants select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of the physical therapy program.

Students need to complete their bachelor's degrees, the required science prerequisite courses and the Graduate Record Exam before becoming eligible to start the physical therapy program in the College of Health Professions at VCU.

Science and non-science courses required for the VCU physical therapy doctoral program

Students must complete 12 semester hours in the biological sciences, including anatomy and physiology, as well as eight hours of chemistry and eight hours of physics for the VCU physical therapy doctoral program.

Precalculus mathematics, statistics, introduction to psychology and one upper-level psychology (abnormal or developmental is preferred) are non-science prerequisites for the physical therapy program.

VCU students are strongly encouraged to take cell biology as well as other upper-level biology courses. Admission to the D.P.T. program is highly competitive. Taking upper-level biology and/or engineering courses will enhance a student's application and make them more competitive.

Additional information for the VCU physical therapy doctoral program

The following prerequisite courses must be completed prior to admission for students entering in the fall semester. If VCU has awarded college credits for Advanced Placement or International Baccalaureate exams and they are listed on the student's transcript, those credits will be accepted.

Prerequisites for the VCU physical therapy doctoral program

Course	Title	Hours
VCU courses		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 205	Basic Human Anatomy (includes lab)	4

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
MATH 151	Precalculus Mathematics	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201 or PHYS 207	General Physics I ¹ University Physics I	4-5
PHYS 202 or PHYS 208	General Physics II ² University Physics II	4-5
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 304 or PSYC 407	Life Span Developmental Psychology Psychology of the Abnormal	3
STAT 210	Basic Practice of Statistics	3
Total Hours		42-44

1

MATH 200 is a prerequisite for PHYS 207.

2

MATH 201 is a prerequisite for PHYS 208.

Additional recommended prerequisites for physical therapy programs nationwide

Physical therapy schools across the U.S. have different prerequisites for admission. The list below shows courses required by various schools beyond the courses listed above for the VCU physical therapy doctoral program. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
HPEX 250	Medical Terminology	1
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory ¹	3
UNIV 291	University Special Topics	1-4

1

Prerequisite: PHIS 206; corequisite: HPEZ 375

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for professional studies for physician assistant

Important general information

Students interested in the pre-physician assistant advising track must obtain a bachelor's degree and complete the necessary prerequisites

in order to apply for a master's-level physician assistant program. If interested in the field of physician assistant, students should consult with a pre-professional health adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Declaration of the pre-physician assistant advising track through the Office of Pre-Professional Health Advising does not constitute admission to any physician assistant program. Students must apply separately to a physician assistant program of their choice at the appropriate time.

If interested in preparing for physician assistant programs, students must declare an academic major and should declare and maintain their pre-physician assistant advising track. Students do not earn a pre-physician assistant degree. Those unsure of their academic majors should initially clarify their academic interests through regular conversations with their advisers. Students in the pre-physician assistant advising track are encouraged to major in fields of greatest interest to them.

Prerequisites for a physician assistant master's program

Students intending to pursue a master's-level physician assistant program must complete a bachelor's degree before entering. It is recommended that applicants select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of the physician assistant program.

Students must complete their bachelor's degree, the required science prerequisite courses, the Graduate Record Exam and co-curricular requirements before becoming eligible to start a master's-level physician assistant program.

The GRE should be taken prior to applying to physician assistant programs and these scores are weighed heavily in admissions decisions. Students planning to take the GRE are strongly advised to prepare extensively through self-directed study or a prep course.

Science and non-science courses required for a physician assistant master's program

The admissions requirements for the schools and colleges offering graduate-level programs for physician assistant vary at each institution. Students who wish to pursue admissions to these programs should complete two semesters of general biology with laboratories, two semesters of general chemistry with laboratories, a semester of organic chemistry with laboratory and two semesters of human anatomy and physiology with laboratories. The science courses should be pre-professional level courses designed for science majors and offer a laboratory experience.

Other courses such as cell biology, biochemistry, genetics, microbiology and medical terminology are highly recommended, depending on the specific physician assistant program.

Statistics, introduction to psychology and one upper-level psychology (abnormal or developmental are preferred) are non-science prerequisites for the physician assistant program.

Due to the variance in requirements for each program, it is highly recommended that students meet with a pre-professional health adviser early to develop a degree plan.

General prerequisites for physician assistant programs

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 205	Basic Human Anatomy	4
BIOL 209 & BIOZ 209 or BIOL 303 & BIOZ 303	Medical Microbiology and Medical Microbiology Laboratory ¹ Microbiology and Microbiology Laboratory	4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I ²	3
HPEX 250	Medical Terminology	1
MATH 151	Precalculus Mathematics	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 304 or PSYC 407	Life Span Developmental Psychology Psychology of the Abnormal	3
STAT 210	Basic Practice of Statistics	3
Total Hours		56-57

1

BIOL 300 is a prerequisite for BIOL 303.

2

CHEM 302 is a prerequisite for CHEM 403.

Additional recommended prerequisites for physician assistant programs nationwide

Physician assistant programs across the U.S. have different prerequisites for admission into their programs. The list below shows courses required by various schools. Students should discuss career plans with their pre-professional health adviser for additional guidance.

Course	Title	Hours
BIOL 300	Cellular and Molecular Biology	3
BIOL 303	Microbiology	3
BIOL 310	Genetics	3

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Preparation for professional studies in veterinary medicine

Important general information

Students interested in the pre-veterinary medicine advising track must obtain a bachelor's degree and complete the necessary prerequisites in order to apply for veterinary school. Those interested in veterinary school should consult with a pre-professional health adviser to learn about requirements that are specific to the schools of veterinary medicine to which they hope to apply.

Declaration of the pre-veterinary medicine advising track through the Office of Pre-Professional Health Advising does not constitute or guarantee admission to any veterinary school. Students must apply separately to a veterinary medicine program of their choice at the appropriate time.

If interested in preparing for veterinary school, students must declare an academic major and should declare and maintain their pre-veterinary advising track. Students do not earn a pre-veterinary medicine degree. Those unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-veterinary medicine students are encouraged to major in fields of greatest interest to them. To declare a pre-veterinary medicine advising track, see the [pre-professional health advising blog](#).

Prerequisites for veterinary school

The Graduate Record Examination is taken prior to application to veterinary school and those scores are weighed heavily in admissions decisions. Students are strongly advised to prepare thoroughly through self-directed study or through a prep course prior to registering to take the GRE.

Science and non-science courses required for veterinary school

Students must complete general biology, cell biology, general chemistry, organic chemistry, biochemistry and physics courses as science prerequisites for admission to veterinary school.

Other science courses, including genetics, animal physiology, comparative vertebrate anatomy and microbiology are strongly recommended for pre-veterinary students.

General prerequisites for Doctor of Veterinary Medicine programs

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 151 or MATH 200 or STAT 210	Precalculus Mathematics ¹ Calculus with Analytic Geometry I Basic Practice of Statistics	3-4
PHYS 201 or PHYS 207	General Physics I University Physics I	4-5
PHYS 202 or PHYS 208	General Physics II University Physics II	4-5
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Total Hours		49-52

1

At least six credits in mathematics is required for the Virginia-Maryland College of Veterinary Medicine.

Additional recommended prerequisites for veterinary medicine programs nationwide

Students are encouraged to review admissions requirements for the specific institution(s) that they are considering applying to as well as VCU course descriptions for prerequisite courses. Students should meet with a pre-professional health adviser after declaring the track to develop their curriculum plan.

Course	Title	Hours
BIOL 300	Cellular and Molecular Biology	3
BIOL 303	Microbiology	3
BIOL 310	Genetics	3
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL 411	Physiology	3

Students should also consult with their pre-professional health advisers to discuss an individual plan of study in parallel with their academic majors.

Nondegree-seeking students

University Academic Advising advises students admitted to VCU with a “nondegree-seeking” status. Undergraduate nondegree-seeking students who have not previously earned a baccalaureate degree may take a maximum of 11 credit hours per semester. Transient students who are seeking a degree at another institution of higher education may take up to 19 credit hours per semester. The nondegree-seeking student adviser helps these students identify appropriate courses for registration according to their educational goals, as well as helping with

the registration process. To schedule an appointment with a university academic adviser, please call (804) 827-8648.

Advising after the first year

Academic advising for sophomores, juniors and seniors is generally provided by faculty and professional advisers within the school or college where their major resides. Students in foundation programs such as Business Foundation, Art Foundation or Lower-division Social Work are continuously advised by University Academic Advising until their successful admission into upper-division standing. Students in pre-nursing, pre-clinical laboratory sciences, pre-clinical radiation sciences and pre-dental hygiene are continuously advised by pre-health advisers in UAA until their successful admission to a professional program or transition into parallel majors.

To schedule an appointment with your adviser, log in to vcu.campus.eab.com (<http://vcu.campus.eab.com>). The schools, departments and colleges are listed below.

College of Engineering
Phone: (804) 828-3925

Department of Clinical Laboratory Sciences (in the College of Health Professions)
Phone: (804) 828-9469

Department of Radiation Sciences (in the College of Health Professions)
Phone: (804) 828-9104

College of Humanities and Sciences
(including the Richard T. Robertson School of Media and Culture and the School of World Studies)
Phone: (804) 827-8211

L. Douglas Wilder School of Government and Public Affairs
Phone: (804) 827-0790

School of the Arts
Phone: (804) 828-1129

School of Business
Phone: (804) 828-3710

School of Dentistry – Dental Hygiene Program
Phone: (804) 828-9096

School of Education
Phone: (804) 828-3382 (or see College of Humanities and Sciences for undergraduate advising within the major)

School of Nursing
Phone: (804) 828-5171

School of Social Work
Phone: (804) 828-0703

VCU Life Sciences
Phone: (804) 828-5600

University College
Phone: (804) 827-8648

The Honors College
Phone: (804) 828-1803

For additional information, visit the Academic Advising website (<http://academicadvising.vcu.edu/>).

Academic advising and learning support courses

UAA offers several academic advising and learning support courses to students, including “Introduction to the University,” “Investigations in Learning,” and “Education and Career Planning.” These courses support students in achieving academic success.

Learning support

The university offers the following centers and services as additional support to students.

Campus Learning Center

A learning and tutoring resource, the Campus Learning Center enhances undergraduate students’ academic success at VCU. All CLC services are free for currently enrolled students. Students can schedule both individual and drop-in tutoring sessions in a wide variety of subjects, from courses in business to math and the social sciences.

The CLC also provides Supplemental Instruction, a nationally recognized program that provides learning support from student leaders who work with classroom instructors to make sure each SI session is beneficial. Typical SI offerings include sessions in entry-level sciences and the social sciences. SI offerings change slightly each semester, so students are encouraged to check the website for updated offerings as well as meeting times and locations. Focused learning courses in biology (UNIV 151 and UNIV 152) are graded one- or two-credit courses, which integrate what-to-learn with how-to-learn. Each course is assigned a peer leader who is majoring in biology and has had extensive training in facilitating group-study sessions.

The CLC also provides the Campus Testing Center, which offers administration of proctored exams, make-up testing and placement exams. For make-up testing, students must consult with their professors to arrange for tests to be taken in the Campus Testing Center. The professor will then send the exam directly to the test center, and the student will schedule a time to take the exam

For more information on the Campus Learning Center, visit the **CLC on the Web** or call (804) 827-8108.

Writing Center

The Writing Center offers free writing assistance for undergraduates, graduate students and faculty from any discipline. Consultants trained in the practice of effective writing and writing instruction offer one-on-one sessions to facilitate writers’ work on assignments.

The Writing Center is a collaborative environment designed to help students produce sharper, more critical thinking and a greater sense of audience as they write. Writing Center consultants encourage students to connect with their work, to invest in it and to take better ownership of their thinking and the subsequent writing that they produce. Weak writing is characterized by weak thinking and exacerbated even more by the distance between the writing task and the student writer. Negotiating this distance is hard work made all the more difficult when students labor in isolation. Working with a consultant the Writing Center helps overcome this isolation and helps students to view their work as a meaningful expression of their thinking.

The Writing Center offers appointments as well as assistance on a drop-in basis. Online services are available to students enrolled in distance-learning courses and for students who are otherwise unable to make it to campus for face-to-face consultations.

For more information, visit **the Writing Center** online or call (804) 828-4851.

Student-athlete support services

The Office of Student Athlete Support Services coordinates academic advising for all student-athletes throughout their enrollment at VCU. This support enhances the opportunities for academic and personal success for student-athletes. The support staff assists students in the development of educational plans, ensures that VCU policies and NCAA rules and regulations regarding academics are being followed, and that students’ needs are successfully being met.

The student-athlete adviser helps student-athletes to understand VCU policies, achieve adequate progress toward graduation, overcome academic difficulties, develop future career goals and maintain NCAA eligibility. Optimal educational and personal success is maximized through tutoring services, study hall, a mentoring program and life-skills development. All freshmen are required to meet weekly with a team adviser, sophomores meet biweekly and all upperclassmen meet with an adviser at least three times per semester. Student-athletes must meet with their adviser to register for classes each semester.

The Office of Student Athlete Support Services has implemented a unique mentoring program where student-athletes help each other create a strong game plan for success. Each semester, junior and senior student-athletes with a minimum GPA of 3.0 are chosen as mentors. The mentees are freshman student athletes and any other student-athletes in need of intense individual support. The mentors and mentees are required to meet weekly and create detailed academic plans for the coming week. The mentors are required to attend biweekly training with the staff of the Office of Student-Athlete Advising.

General education curriculum

VCU’s general education curriculum seeks to provide a diverse student body with a broad base of knowledge and the intellectual skills to participate actively in a changing world. To those ends, the general education curriculum challenges students to seek creative answers to complex problems, see connections between disciplines and between ideas, and develop an informed perspective on the varieties of human experience. Courses included in the general education curriculum are open to all VCU undergraduate students and therefore do not focus on those skills, techniques or procedures specific to a particular occupation or profession. The general education curriculum which follows consists of 30 credit hours divided into three sections: foundations, breadth of knowledge and areas of inquiry. While foundations courses are distinct from the rest of the general education curriculum, the courses contained within the breadth of knowledge and areas of inquiry sections overlap.

Foundations (12-13 credits)

To ensure that all students enrolled at VCU are provided with a firm foundation upon which to pursue their intellectual and professional goals, the general education curriculum requires that all students take the following courses.

Course	Title	Hours
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II ¹	3
UNIV 200	Inquiry and the Craft of Argument ¹	3
Quantitative foundations		
Select one of the following:		3-4
BUSN 171	Mathematical Applications for Business	
BUSN 212	Differential Calculus and Optimization for Business	
MATH 131	Introduction to Contemporary Mathematics	
MATH 139	College Algebra with Applications	
MATH 141	Algebra with Applications	
MATH 151	Precalculus Mathematics	
MATH 200	Calculus with Analytic Geometry I	
STAT 208	Statistical Thinking	
STAT 210	Basic Practice of Statistics	
STAT 212	Concepts of Statistics	
Total Hours		12-13

1

A minimum grade of C is required in UNIV 112 and UNIV 200. Transfer credits are not accepted for these three UNIV courses after a student is enrolled at the university.

Breadth of knowledge (SACSCOC) (nine credits)

2

All students must earn at least three credits in each of the three breadth of knowledge areas listed below. All courses listed in the three sections below also count toward the 17-18 credit hour areas of inquiry requirement.

Course	Title	Hours
Humanities/fine arts		
This requirement is fulfilled by these courses included in the four areas of inquiry. Select one of the following.		3
AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies	
ARTE 222	Rethinking Popular, Visual and Media Culture	
ARTH 201	Banned! Art and Controversy	
CREA 201	The Creative Economy	
DANC 230	Dance in Hollywood	
ENGL 215	Reading Literature	
ENGL 250	Reading Film	
HIST 201	The Art of Historical Detection: ____	
HIST 202	History Without Borders: ____	

IDES 261	What is Good Design? A Survey of 20th- and 21st-century Design	
MHIS 251	American Popular Music	
MHIS 252	Soundscapes	
NEXT 240	Reading Technology, Media and Culture	
PHIL 201	Introduction to Ethics	
PHIL 221	Critical Thinking	
RELS 108	Human Spirituality	
THEA 215	Live Theatre Now	
UNIV 299	What's the Big Idea?	
WRLD 203	Cultural Texts and Contexts: ____	
WRLD 230	Introduction to World Cinema	

Natural sciences

This requirement is fulfilled by these courses included in the four areas of inquiry. Select one of the following. 3

BIOL 101	Biological Concepts	
BIOL 103	Global Environmental Biology	
BIOL 151	Introduction to Biological Sciences I	
BNFO 125	Disease and Human Ancestry	
CHEM 101	General Chemistry I	
CHEM 110	Chemistry and Society	
CHEZ 101	General Chemistry Laboratory I	
ENVS 201	Earth System Science	
FRSC 202	Crime and Science	
INSC 201	Energy!	
PHYS 101	Foundations of Physics	
PHYS 103	Elementary Astronomy	
PHYS 201	General Physics I	
PHYS 207	University Physics I	

Social/behavioral sciences

This requirement is fulfilled by these courses included in the four areas of inquiry. Select one of the following. 3

ANTH 103	Introduction to Anthropology	
CLED 200	The Science of Resilience and Holistic Health	
ECON 203	Introduction to Economics	
ECON 205	The Economics of Product Development and Markets	
ECON 210	Principles of Microeconomics	
EDUS 203	Pop-cultural Foundations of Education: Film/TV, Music, Literature and Schooling in the U.S.	
GSWS 201	Introduction to Gender, Sexuality and Women's Studies	
INTL 101	Human Societies and Globalization	
MASC 101	Mass Communications	
MASC/INTL 151	Global Communications	
MASC 274	Diversity in the Media	
POLI 103	U.S. Government	
POLI/INTL 105	International Relations	
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	

SCTS 200	Science in Society: Values, Ethics and Politics	
SEDP 202	Preparing Diverse Learners From Multicultural and Global Perspectives	
SLWK 200	Building a Just Society	
SOCS 340	Human Sexuality	
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology	
SOCY/INTL 250	Confronting Climate Crisis	
TEDU 207	Urban Awareness and Urban Education	
TEDU 210	Debunking Classroom Myths: How and Why Do We Learn Ideas Incorrectly?	
Total Hours		9

2

Courses taken to fulfill the three breadth of knowledge requirements categories also count toward the general education curriculum's four areas of inquiry.

Areas of inquiry (17-18 credits total, including the nine credits from breadth of knowledge)

The remaining course work in the general education curriculum must be divided among the four areas of inquiry below, with at least three, and no more than nine, credits from each of the four areas. In fulfilling these requirements, students may apply no more than six credits with the same four-letter prefix (ex. RELS, MGMT) to the 17-18 credit total requirement, regardless of the area of inquiry under which they are listed. Courses taken to complete the breadth of knowledge requirements also fulfill area of inquiry requirements.

Course	Title	Hours
Creativity, innovation and aesthetic inquiry		
Courses in this area encourage students to examine the circumstances that produce creative work; investigate the criteria used to judge creative work; and consider the role of imagination in expressing the human condition.		3-9
ARTE 222	Rethinking Popular, Visual and Media Culture	
ARTH 201	Banned! Art and Controversy	
CREA 201	The Creative Economy	
DANC 230	Dance in Hollywood	
EDUS 203	Pop-cultural Foundations of Education: Film/TV, Music, Literature and Schooling in the U.S.	
ENGL 215	Reading Literature	
ENGL 250	Reading Film	
IDES 261	What is Good Design? A Survey of 20th- and 21st-century Design	
INNO 210	The Innovation Intersection: Industry and Entrepreneurship	
MHIS 251	American Popular Music	
MHIS 252	Soundscapes	
NEXT 240	Reading Technology, Media and Culture	
SPCH 221	Oral Communication and Presentation	

THEA 215	Live Theatre Now
WRLD 203	Cultural Texts and Contexts: ____
WRLD 230	Introduction to World Cinema

Diversities in the human experience

These courses will introduce students to the modes of inquiry used in the study of social institutions and human behavior. Students enrolled in these courses will seek to investigate the relationship between the individual and society and the varieties of human psychology and development. 3-9

CLED 200	The Science of Resilience and Holistic Health
CSIJ 200	Race and Racism in America
GRTY 200	Disrupting Ageism: An Exploration of Diversity and Aging
GSWS 201	Introduction to Gender, Sexuality and Women's Studies
HIST 201	The Art of Historical Detection: ____
HSEP 101	Homeland Security and Emergency Preparedness
MASC 101	Mass Communications
MASC 274	Diversity in the Media
NURS 103	Culture, Diversity and Communication in Health Care Settings
NURS 104	Conceptualizing Mental Illness in Western Culture
PHIL 201	Introduction to Ethics
POLI 103	U.S. Government
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology
RELS 108	Human Spirituality
SLWK 200	Building a Just Society
SOCS 340	Human Sexuality
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology
TEDU 207	Urban Awareness and Urban Education
UNIV 299	What's the Big Idea?

Global perspectives

Through these courses students will encounter and comprehend cultures and contexts outside the U.S.; develop an understanding of how the world is interconnected; and consider alternative viewpoints among disciplines, histories and cultures. 3-9

AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies
ANTH 103	Introduction to Anthropology
BUSN 205	Introduction to the World of Business
ECON 203	Introduction to Economics
ECON 205	The Economics of Product Development and Markets
ECON 210	Principles of Microeconomics

HIST 202	History Without Borders: ____
INTL 101	Human Societies and Globalization
MASC 151	Global Communications
POLI 105	International Relations
SEDP 202	Preparing Diverse Learners From Multicultural and Global Perspectives
SOCY 250	Confronting Climate Crisis
URSP 350/ INTL 345/FRLG 345	Great Cities of the World

Scientific and logical reasoning

These courses examine how logical and empirical methods can be used to form and revise beliefs; use scientific concepts to describe the world and formulate questions; and model phenomena through the use of mathematics, computer programs and physical representations. 3-9

BIOL 101	Biological Concepts
BIOL 103	Global Environmental Biology
BIOL 151	Introduction to Biological Sciences I
BNFO 125	Disease and Human Ancestry
CHEM 101	General Chemistry I
CHEM 110	Chemistry and Society
CHEZ 101	General Chemistry Laboratory I
CMSC 210	Computers and Programming
EGRB 102	Introduction to Biomedical Engineering
EGRB 105	Successes and Failures in Biomedical Technologies
ENVS 201	Earth System Science
FIRE 301	Personal Financial Planning
FRSC 202	Crime and Science
HPEX 310	Fitness and Health
INSC 201	Energy!
MATH 120	Seeing, Playing, Deciding – This is Math?
PHIL 221	Critical Thinking
PHYS 101	Foundations of Physics
PHYS 103	Elementary Astronomy
PHYS 201	General Physics I
PHYS 207	University Physics I
SCTS 200	Science in Society: Values, Ethics and Politics
TEDU 210	Debunking Classroom Myths: How and Why Do We Learn Ideas Incorrectly?

Total Hours

17-18

VCU's general education learning goals, definitions and outcomes

Communicative fluency

Communicative fluency is understanding and creating shared meaning with effective use of language and communicative practices, intentional engagement of audience, cogent and coherent iteration and negotiation with others, and skillful translation across multiple expressive formulations and modes.

1. Develop and present cogent, coherent and error-free written communication with general and specialized audiences
2. Develop and present cogent, coherent and error-free oral communication with general and specialized audiences
3. Recognize and use other modalities of communication (e.g. digital, expressive and scientific) effectively and appropriately
4. Understand and effectively uses genre and disciplinary conventions for communication, including syntax and mechanics, for a variety of purposes
5. Choose a variety of sources of evidence appropriate to the audience and purpose; selects sources after considering the importance of multiple criteria, such as relevance, currency, authority, scholarship, and bias or point of view
6. Achieve positive outcomes with others through interpreting both verbal and nonverbal information, social perceptiveness, empathy, persuasion and negotiation; able to select key pieces of a complex idea to express in words, sounds and images, in order to build shared understanding

Ethical reasoning

Ethical reasoning includes judgments of right and wrong, good and bad, related to human conduct especially concerning matters of justice, fairness, equity and social responsibility. Value systems, both culturally inherited and different from students' own experiences, inform the deliberations regarding the quality of life and social goods necessary to employ ethical decision-making.

1. Recognize ethical issues
2. Identify one's culturally inherited beliefs through self-awareness and civic identity
3. Understand the different ethical perspectives/concepts and diversity of communities and cultures
4. Apply beliefs and ethical perspectives
5. Demonstrate the impact of ethical decision-making on civic contexts and structures

Global and cultural responsiveness and agility

Global and cultural responsiveness and agility requires (1) suspension of judgment in valuing interactions with culturally different others and (2) empathic and flexible responsiveness to unfamiliar ways of being, recognizing that all actions have correlative intercultural effects. This competency's primary goal, achievable only after several courses with this competency, is for students to advance equity and justice on local and global levels, well-informed by historical and political contexts.

1. Demonstrate understanding of relevant historical, cultural and political contexts
2. Compare and contrast practical and ideological differences among cultures
3. Show appropriate contexts and methods for suspending value judgments

4. Demonstrate capacity for empathy
5. Demonstrate sensibility to actions' consequent reciprocal reactions

Information literacy

Information literacy is a set of integrated abilities to solve problems and generate new knowledge that encompasses recognizing an information need; critically identifying, locating and evaluating appropriate resources; and responsibly and effectively synthesizing, applying and sharing information.

1. Recognize an information need and determine extent and type of information needed
2. Identify and locate appropriate sources
3. Critically evaluate information and its sources
4. Effectively synthesize, apply and share information to accomplish a specific purpose
5. Demonstrate understanding of relevant legal and ethical issues for information use

Problem solving (critical and creative)

Problem solving is the process of designing, evaluating and implementing approaches to open-ended questions in order to achieve a desired outcome or goal, based on both (1) the comprehensive exploration of issues, ideas, artifacts and events before accepting or formulating an opinion or conclusion and (2) the synthesis of ideas, images or expertise, and imaginative thinking characterized by innovation, divergent thinking and risk-taking.

1. Define complex problems, issues or questions
2. Identify and seek out approaches, information, skills and relevant resources
3. Develop and propose multiple solutions (demonstrating intellectual risk-taking and tolerance for ambiguity)
4. Evaluate potential solutions with awareness of contradictions, competing assumptions and consideration of context
5. Analyze the implications, consequences and outcomes of solutions

Quantitative literacy

Quantitative literacy is the knowledge of mathematical/statistical operations and graphical representations of numerical data; the knowledge of how to represent real-world objects, events, information and problems as symbolic data sets; the ability to recognize which mathematical/statistical operations are applicable to given data sets; and the ability to analyze, interpret and explain the output of mathematical/statistical operations performed by the student or presented in the published literature.

1. Convert information into mathematical/symbolic forms
2. Recognize the appropriate mathematical/statistical operations for the analysis of given information/data sets
3. Perform mathematical/statistical operations

4. Extract the meaning of a quantitative analysis, draw inferences and produce appropriate conclusions
5. Express the rationale for the application of specific operations to specific data sets and the validity of conclusions derived from analyses

REAL initiative

VCU's REAL initiative ensures every VCU undergraduate completes at least one experiential learning course or co-curricular activity that engages them fully in meaningful, hands-on research, scholarship or creative work directly relevant to realizing their personal and professional goals. The initiative is driven and defined by the REAL 3Cs: Connect, Create, Contribute. VCU REAL helps **connect** ideas, communities and resources in order to **create** solutions and new approaches that **contribute** to solving today's most pressing social, scientific and economic challenges. Through a graduation requirement for incoming undergraduate students beginning in fall of 2021 and a thriving community of practice engaging faculty, staff and students from across VCU, REAL leverages a long-standing history and traditions as an engaged, urban public institution to prepare VCU students to make their marks as problem-solvers in a changing world.

For students, VCU REAL also provides access to the Student Opportunity Center (<https://real.vcu.edu/soc/>), a central hub to find experiential learning opportunities, including activities that fulfill the REAL undergraduate graduation requirement (<https://real.vcu.edu/>) such as designated internships, service learning courses, education abroad experiences, collaborative research, peer leadership, interdisciplinary projects and more.

Students interested in learning about the REAL undergraduate graduation requirement and ways to fulfill it within their programs of study should contact their academic advisers. For general information regarding graduation with distinction programs and how REAL can give students an edge as they prepare for their next great journey, contact:

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Accelerated bachelor's-to-master's programs

VCU offers a number of accelerated bachelor's-to-master's degree programs that allow academically talented undergraduate students to earn both degrees in a minimum of five years by taking approved graduate-level courses during the senior year of their undergraduate program. Accelerated bachelor's-to-master's programs must be approved by both the University Undergraduate Curriculum Committee and the University Graduate Council. Descriptions for accelerated programs are presented in the Undergraduate Bulletin and can be viewed on the opportunities tab of the participating programs.

To be eligible to apply for an accelerated bachelor's-to-master's program, undergraduate students must have successfully completed a minimum

of 30 hours of course work at VCU and be in good academic standing with a minimum cumulative GPA of 3.0. Individual programs may require higher academic achievement and/or standardized test scores for admission to accelerated programs. Prospective applicants should refer to the individual program section of the Bulletin for specific information on eligibility criteria and admission process, including application deadlines. Undergraduate students must have departmental approval and must apply for admission to the master's program for a future term prior to beginning their final year of full-time undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Once accepted into an accelerated bachelor's-to-master's program, students may enroll in the shared graduate course work identified in the approved curriculum outlined in this Bulletin (or on the student's plan of study approved at the time of admission). Students may complete a maximum of 12 hours of approved graduate course work during the final year of their undergraduate career, which may be applied to both the undergraduate and graduate degrees, based on the standards specified below. Individual programs may set additional restrictions on the number of graduate credits that can be completed while the student is an undergraduate and applied to both the undergraduate and graduate degrees.

Students in accelerated bachelor's-to-master's programs may not utilize the undergraduate students in graduate courses (<http://bulletin.vcu.edu/graduate/study/undergraduate-students-graduate-classes/>) option to complete more than 12 hours of graduate courses before conferral of the undergraduate degree. Graduate courses at the 600-level that have not been identified as part of the shared course work should not be attempted until the undergraduate degree has been conferred and the student's status has changed from undergraduate to graduate. No graduate-level course work should be taken before the senior year. No undergraduate course work may be counted toward the master's degree.

In order to meet continuance standards, students in accelerated bachelor's-to-master's programs must achieve a minimum grade of 3.0 (B) in each graduate course identified in the approved curriculum in the Bulletin (or the student's plan of study approved at the time of admission) and attempted while in undergraduate status. Students who do not receive a minimum grade of 3.0 (B) in graduate course work taken in undergraduate status will be reviewed for possible dismissal from the accelerated program. Substitutions for any of the shared graduate course work must be approved by the undergraduate and graduate advisers before the last day of add/drop registration of the semester in which the student wishes to take the substituted course(s).

COLLEGE OF ENGINEERING

Since its inception as a school in 1996, the now-College of Engineering at VCU has brought innovative, real-world engineering education to Central Virginia. The college currently teaches nearly 2,000 undergraduate students and approximately 300 graduate students. Students can earn B.S., M.S. and Ph.D. degrees through the departments of Biomedical Engineering, Chemical and Life Science Engineering, Computer Science, Electrical and Computer Engineering, and Mechanical and Nuclear Engineering.

Engineering skills alone do not equal success in the 21st century. The college challenges students to think bigger and actively collaborate with community businesses and students from a wealth of backgrounds – such as graphic design, physics and health care. Cross-disciplinary focus areas include sustainability and energy engineering, micro- and nano-electronic systems, pharmaceutical engineering, mechanobiology and regenerative medicine, security and mining of big data, and device design and development.

Students also benefit from close, personal interactions with faculty and from the many opportunities available for internships, cooperative education and undergraduate research experiences. Interdisciplinary research opportunities are offered through various state-of-the-art facilities, including the college's Nanomaterials Core Characterization Facility, the Institute for Engineering and Medicine, the Wright-Virginia Microelectronics Center, the dean's undergraduate research initiative and the da Vinci Center. To learn more, visit the College of Engineering website (<http://www.egr.vcu.edu/>).

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Executive associate dean for finance and administration

Gregory Triplett, Ph.D.
Senior associate dean for academic affairs

Zvi Schwartz, Ph.D., D.M.D.
Associate dean for strategic initiatives

Ram B. Gupta, Ph.D.
Associate dean for faculty research development

Accreditation

The Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Chemical and Life Science Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Computer Science program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Nuclear Engineering option in Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Degree programs

The College of Engineering offers the following degree programs:

Bachelor of Science

Biomedical Engineering
Chemical and Life Science Engineering
Computer Engineering
Computer Science
Electrical Engineering
Mechanical Engineering

- Mechanical Engineering with a concentration in nuclear engineering

Students also may be admitted under “undeclared engineering” for entrance to the College of Engineering. A field of study can be determined after the first semester. Students in undeclared engineering are subject to the change of major criteria listed by each department.

Master of Science

Biomedical Engineering
Computer Science
Engineering

- Engineering with a concentration in chemical and life science engineering
- Engineering with a concentration in electrical and computer engineering

Mechanical and Nuclear Engineering

Doctor of Philosophy

Biomedical Engineering
Chemical and Life Science Engineering
Engineering

- Engineering with a concentration in chemical and life science engineering
- Engineering with a concentration in computer science
- Engineering with a concentration in electrical and computer engineering

Mechanical and Nuclear Engineering

Pharmaceutical Engineering (offered in conjunction with the School of Pharmacy)

Dual degree

M.D./Ph.D. in Biomedical Engineering in participation with the School of Medicine

Interdisciplinary and cooperative studies degree

M.S. degree through the Commonwealth Graduate Engineering Program

Baccalaureate certificate

Fundamentals of Computing

Post-baccalaureate certificate

Computer Science

Cybersecurity

Data Science

Undergraduate information

Academic policies for undergraduates

Students majoring in biomedical, chemical and life science, computer, electrical, or mechanical engineering must attain a minimum grade of C in all major courses taken. If a student receives a grade below C in any major course, that course must be retaken until the student receives a minimum grade of C. Department chairs may also identify other vital courses (i.e., math, physics) within the major for which a minimum grade of C must be achieved.

College policy of reasonable progress

Minimum major grade point average: Upon completion of 36 or more credit hours at VCU, any student whose major GPA falls below 2.0 will be placed on in-college academic probation and will have an advising hold placed on his/her account. The student must meet with the student advising office and their faculty adviser to determine the courses to be taken the next semester. From that point forward, the student must maintain a semester minimum major GPA of 2.0. Upon failing to meet that standard, the student will be dismissed from the program.

Course failures and withdrawals: A student may attempt to complete each required major course a maximum of three times. When a student does not earn a minimum grade of C on the second attempt to complete the same major course (this will include instances in which the student withdraws from a class), the student will be notified and a hold will be placed on his/her account, prohibiting him/her from registering for classes. The student must meet with the student advising office and his/her faculty adviser to determine the courses to be taken the next semester.

If a student earns any combination of three D, F or W grades in a single required major course (including a grade excluded from the GPA calculation), then the student will be immediately dismissed from the program. A student may appeal one grade within seven business days after grades are posted. This appeal will be considered by a department committee, and a decision will be rendered before the last day of add/drop of the subsequent semester. In the case of exceptional circumstances, the committee may grant the student a fourth attempt to complete the course with a minimum grade of C. If the student does

not earn a minimum grade of C on the fourth attempt, he or she will be immediately dismissed from the program.

All departments in the College of Engineering follow the above general policy of reasonable progress, unless they choose to replace them with more restrictive rules. These rules would be described in the "Special requirements" section of the individual curriculum outline.

Because of the rotating nature of higher level technical electives in the computer science program and the student's planned graduation date, computer science students may not be able to take advantage of the repeat course option offered by the university. Students should be aware of this rotating schedule and plan accordingly.

In some cases, students may be required to take foundation courses as the result of placement tests in order to prepare themselves to enter the required courses in mathematics, sciences or languages. Credit received for these foundation courses does not count toward the baccalaureate degree.

Historical repeat option exclusion

All VCU College of Engineering course subjects are exempt from the historical repeat option; students taking CLSE, CMSC, EGMN, EGRB, EGRE or ENGR courses will not be allowed to file the historical repeat option in the case of a D or F in those courses.

VCU College of Engineering students are allowed to apply the current historical repeat option on their non-engineering courses only.

Graduation requirements

Students in the majors of biomedical, computer, electrical and mechanical engineering must complete a minimum of 130 credit hours to be eligible for the bachelor's degree.

Students in chemical and life science engineering with a concentration in chemical engineering must complete a minimum of 126 credit hours to be eligible for a bachelor's degree.

Students in chemical and life science engineering with a concentration in life science engineering must complete a minimum of 127 credit hours to be eligible for a bachelor's degree.

Students in computer science must complete a minimum of 120 credit hours to be eligible for the bachelor's degree.

Requirements for the bachelor's degrees offered by the College of Engineering (engineering disciplines and computer science) include university undergraduate requirements (refer to the academic regulations (p. 22) section in this bulletin), general education requirements and program-level degree requirements.

Students seeking the bachelor's degree for any of the programs within the College of Engineering (computer science or biomedical, chemical and life science, computer, electrical, or mechanical engineering) are responsible for understanding the specific and unique requirements of the individual programs and must complete all of them to be eligible for the granting of the degree sought.

Cooperative education program

The VCU College of Engineering cooperative education program is an optional experiential learning program in which a student works in an approved, full-time, paid industrial position. The student works two or more semesters starting during the sophomore or junior year to meet

specific learning objectives while gaining practical experience relevant to their major and earning money to offset educational expenses. The employer may prefer for the student to alternate semesters of work and school or to work consecutive semesters. An approved co-op experience can substitute for a departmental internship requirement.

Students interested in co-op must first complete ENGR 395 to prepare them to find a job and succeed in a professional environment. When a student is hired into a co-op position, he or she enrolls in ENGR 398 to maintain student status during work terms. He or she also documents progress toward learning objectives and writes about the learning experience. Following the final work term, the student enrolls in ENGR 498 to document that all co-op program requirements have been satisfied. Upon completion of this course, the student's transcript will indicate that the co-op program has been completed.

Students who meet the following criteria are eligible to begin participating in co-op work terms:

- Earned at minimum 24 credit hours, with at least 12 credit hours completed at VCU
- Good academic standing
- Overall minimum GPA of 2.7
- College of Engineering major
- Completed ENGR 395

Employers may require additional credits, higher GPAs or other criteria for eligibility. Also, because employers make the hiring decisions, VCU cannot guarantee that an eligible student will be hired into a co-op position.

A student may request an exception to the eligibility criteria as soon as they receive a co-op job offer or, at the latest, on the first day of the semester that the student will participate in a work term. All requests must be submitted on a form that can be obtained from the College of Engineering Career Services office. Requests will be considered by a committee, and a decision will be rendered on or before the last day of add/drop of that semester. In the case of exceptional circumstances, the committee may allow the student to enroll in ENGR 398 without meeting all of the eligibility criteria.

For more information about the co-op program, visit the College of Engineering Career Services (<http://www.egr.vcu.edu/careerservices/>) website.

Double major (B.S.) in engineering and physics

This program provides biomedical, chemical and life science, electrical, computer, mechanical, and nuclear engineering majors the opportunity to earn a double major in physics, requiring an additional nine to 17 credits beyond the hours required for the primary engineering major. The requirements for the double major are the same as those in the program description for the Bachelor of Science in Physics. Within the double major, a select number of engineering courses are acceptable substitutes for required physics courses.

The lists below show the total credits and required courses necessary – beyond what can be used as requirements for that major – for students to complete a double major in physics. In addition, the courses that are

used from the primary engineering major toward fulfillment of the physics major are provided.

Biomedical engineering (17 credits): Additional courses are MATH 307, PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that are required for the biomedical engineering major include: EGRB 303 replaces PHYS 340; EGRB 401 and EGRB 402 replace PHYS 450 and PHYS 490; and EGRB 427 counts as an upper-level physics elective.* PHYS 207 and PHYS 208 also are required physics courses, and MATH 310 and STAT 441 count as upper-level physics electives.*

Chemical and life science engineering (13 credits): Additional courses are PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that are required for the chemical or life science engineering major include: CLSE 305 replaces PHYS 340; ENGR 402, ENGR 403, CLSE 402 and CLSE 403 replace PHYS 450 and PHYS 490; and CLSE 301 and CLSE 302 count as upper-level physics electives.* PHYS 207 and PHYS 208 are also required physics courses, and STAT 441 counts as an upper-level physics elective.*

Computer engineering (nine credits): Additional courses are PHYS 301, PHYS 340 and PHYS 380.

Courses used that can be taken to complete the computer engineering major include: EGRE 309 (computer engineering elective) replaces PHYS 376; and ENGR 402, ENGR 403 and one selection from EGRE 404 and EGRE 405 (both) or EGRE 406 and EGRE 407 (both) replace PHYS 450 and PHYS 490. EGRE 306 and EGRE 310 also count as an upper-level physics electives,* and the two remaining credits of upper-level physics electives* can be chosen from EGRE 303, EGRE 307, EGRE 334 and EGRE 521. MATH 307, PHYS 320 and PHYZ 320 (one credit) are required for physics and can be used as technical electives for computer engineering. PHYS 207 and PHYS 208 are also required physics courses.

Electrical engineering (nine credits): Additional courses are PHYS 301, PHYS 340 and PHYS 380.

Courses used that can be taken to complete the electrical engineering major include: EGRE 309 replaces PHYS 376; and ENGR 402, ENGR 403, and one selection from EGRE 404 and EGRE 405 (both) or EGRE 406 and EGRE 407 (both) replace PHYS 450 and PHYS 490. EGRE 303, EGRE 306 and EGRE 310 also count as upper-level physics electives.* PHYS 320 and PHYZ 320 (one credit) are required for physics and can be used as technical electives for electrical engineering. PHYS 207 and PHYS 208 are required physics courses.

Mechanical engineering (13 credits): Additional courses are PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that can be taken to complete the mechanical engineering major include: EGMN 302 replaces PHYS 340; and ENGR 402, ENGR 403, EGMN 402 and EGMN 403 replace PHYS 450 and PHYS 490. Taken together, EGMN 301, EGMN 309, and either STAT 441 or EGMN 351 satisfy the upper-level physics elective requirement.* PHYS 207 and PHYS 208 are required physics courses.

Mechanical engineering majors should consult with an adviser to determine whether any upper-level physics courses can be used to satisfy mechanical engineering technical elective or nuclear engineering elective requirements.

* Any physics/physics-related elective course as listed in the bulletin description for the B.S. in Physics.

With regard to general education requirements, students must fulfill the requirements of their primary engineering major. Any student interested in a physics double major should contact the physics department at (804) 828-1818 or physics@vcu.edu.

Dual degree opportunities

Through a cooperative arrangement between VCU's School of Engineering and Virginia Union University, selected students from VUU may pursue a combined curriculum of undergraduate study leading to a Bachelor of Science in an engineering area from VCU in addition to a baccalaureate from VUU. The objectives of this dual degree program are to prepare diverse professionals in the values, knowledge and skills of both fields to provide an integrated base of competency to serve the commonwealth of Virginia. Students from VUU who successfully complete the dual degree program will receive one of the following degree combinations:

- Bachelor of Science in Physics (VUU) and Bachelor of Science in Electrical Engineering (VCU)
- Bachelor of Science in Physics (VUU) and Bachelor of Science in Mechanical Engineering (VCU)
- Bachelor of Science in Chemistry (VUU) and Bachelor of Science in Chemical and Life Science Engineering with a concentration in chemical engineering (VCU)

Among the many benefits offered by participation in the dual degree program are the following:

- Students will be able to receive two degrees concurrently in less time than it would take them to receive the same degrees sequentially.
- By participating in two distinct programs, with full access to all services provided by each program, students benefit from complementary resources.
- Through their simultaneous and active participation in two programs, students will be able to widen their professional and personal network.

General admission requirements

In order to be eligible for the dual degree program, VUU students must be an accepted and enrolled student in the VUU physics or chemistry program and have not completed more than 60 credit hours at VUU. Prior to the completion of 60 credit hours at VUU, the student must indicate their desire to participate in the dual degree program to the VUU dual degree program liaison and apply for pre-dual degree status in VCU's College of Engineering as a nondegree-seeking student. Once VUU students are enrolled in the required courses as a pre-dual degree status student, they must apply for admission through the VCU Office of Admissions for the dual degree program. An admission decision will be made by the VCU College of Engineering once grades for the introductory courses have posted.

Pre-dual degree status

Students at VUU will be permitted to enroll in the introductory VCU courses below as a nondegree-seeking student before they are admitted into the dual degree program:

- Electrical engineering: EGRE 101 or ENGR 101
- Chemical and life science engineering: CLSE 101 or ENGR 101
- Mechanical engineering: EGMN 102, EGMN 103 and EGMN 190

Admission to the dual degree program is not guaranteed and is subject to the rules in the agreement between VCU and VUU. Students must consult with their VUU advisers to learn if and how the above courses would transfer back to VUU in the event that the student does not enroll into the corresponding dual degree program.

Dual degree status

Students who meet the following criteria will be guaranteed admission to the dual degree program with VCU. Students who do not meet all of the following criteria may still apply for admission to the dual degree program and will be evaluated on a competitive basis.

- Students must present a minimum cumulative VUU GPA of 3.0.
- Students must present a minimum cumulative VCU GPA of 3.0 (if applicable)
- Students must have completed the following courses or their equivalents at any institution with a minimum grade of B (3.0) in each course: MATH 200, MATH 201, PHYS 207, CHEM 101 and CHEZ 101, as well as one of ENGR 101, CLSE 101 or EGRE 101 (for electrical or chemical and life science engineering) or all of EGMN 102, EGMN 103 and EGMN 190 (for mechanical engineering).
- The average grade for the following courses or their equivalents at any institution, if attempted, must be at minimum 3.0*: MATH 211, MATH 301, MATH 307 and PHYS 208.
- The average grade for all attempted engineering and computer science courses, regardless of where they are taken, must be at minimum 3.0.*

*All grade averages mentioned herein are computed from all course work attempted at VUU, VCU and other institutions. For repeated course work, grades for all attempts will be averaged.

Once admitted to the program, students are urged to meet with their advisers at VCU and VUU to review their course of study, keeping in mind the timelines and requirements for each program. Each program is responsible for informing the students in the dual degree program of the courses available to meet degree requirements for each of the programs and that are a part of the agreement.

VCU program residency requirements

To fulfill the dual degree requirement for VCU, VUU students must earn at least 25 percent of the credits required for the degree, including at least 30 of the last 45 credits, at VCU. Students must also earn a minimum of 45 upper-level credits.

VUU program residency requirements

Students must meet all VUU degree and program residency requirements.

Failure to complete

Students who fail to make satisfactory academic progress in either program will be reviewed for dismissal from the dual degree program.

Second baccalaureate degree

VUU graduates who have completed the Bachelor of Science degree in physics or chemistry are welcome to apply to the corresponding VCU College of Engineering program as a second baccalaureate student.

Department of Biomedical Engineering

Henry J. Donahue, Ph.D.

Professor and chair

biomedical.egr.vcu.edu (<https://egr.vcu.edu/departments/biomedical/>)

The Department of Biomedical Engineering offers programs at the baccalaureate, master's and doctoral level.

Biomedical engineering provides in-depth study in a variety of specialization areas including biomedical imaging systems, orthopaedic biomechanics, tissue and cellular engineering, biomaterials, artificial organs, human-computer interfaces, cardiovascular devices, rehabilitation and human factors engineering. The programs allow students to participate in cutting-edge research in one of the nation's most advanced engineering facilities. The department has ongoing collaborations with numerous industries, federal laboratories, the VCU science departments, the university's MCV Campus, the Hunter Holmes McGuire Veterans Affairs Medical Center, the Virginia BioTechnology Research Park and numerous biomedical and clinical programs throughout the VCU Medical Center's MCV Hospitals.

- Biomedical Engineering, Bachelor of Science (B.S.) (p. 87)

Biomedical Engineering, Bachelor of Science (B.S.)

Biomedical engineering applies engineering expertise to analyze and solve problems in biology and medicine in order to enhance health care. Students involved in biomedical engineering learn to work with living systems and to apply advanced technology to the complex problems of medical care. Biomedical engineers work with other health care professionals including physicians, nurses, therapists and technicians toward improvements in diagnostic, therapeutic and health delivery systems. Biomedical engineers may be involved with designing medical instruments and devices, developing medical software, tissue and cellular engineering, developing new procedures or conducting state-of-the-art research needed to solve clinical problems.

There are numerous areas of specialization and course work within biomedical engineering. These include:

1. **Bioinstrumentation:** the application of electronics and measurement techniques to develop devices used in the diagnosis and treatment of disease, including heart monitors, intensive care equipment, cardiac pacemakers and many other electronic devices.
2. **Biomaterials:** the development of artificial and living materials used for implantation in the human body, including those used for artificial heart valves, kidney dialysis cartridges, and artificial arteries, hips and knees.
3. **Biomechanics:** the study of motion, forces and deformations in the human body, including the study of blood flow and arterial disease, forces associated with broken bones and their associated repair mechanisms, mechanisms of blunt trauma including head injuries,

orthopedic systems, and the forces and movement associated with human joints such as the knee and hip.

4. **Tissue and cellular engineering:** the application of biochemistry, biophysics and biotechnology toward the development of new cellular and tissue systems and an understanding of disease processes, including development of artificial skin and organs, cell adherence to artificial materials to prevent rejection by the body, and the development of new genetic cellular systems to treat diseases.
5. **Medical imaging:** the development of devices and systems to image the human body to diagnose diseases, including the development and data processing of the CAT scan, MRI (magnetic resonance imaging), medical ultrasound, X-ray and PET (positron emission tomography).
6. **Rehabilitation and human factors engineering:** the development of devices and prosthetics to enhance the capabilities of disabled individuals, including design of wheelchairs, walkers, artificial legs and arms, enhanced communication aids, and educational tools for people with disabilities.

A unique aspect to the undergraduate biomedical engineering is the practicum series, EGRB 101 and EGRB 301, which involves biomedical engineering students participating in medical rounds at the VCU Medical Center's MCV Hospitals, in medical research laboratories throughout the medical center and the Virginia BioTechnology Research Park, and in medical seminars, case studies and medical laboratories. This unique opportunity is the only one of its kind in the nation and involves the cooperation of the VCU Medical Center, one of the nation's largest and most prestigious medical centers.

Learning outcomes

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Degree requirements for Biomedical Engineering, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		

EGRB 101	Biomedical Engineering Practicum	2
EGRB 104	Introduction to Biomedical Engineering Laboratory	1
EGRB 111	Introduction to Biological Systems in Engineering	3
EGRB 203	Statics and Mechanics of Materials	3
EGRB 209	Applied Physiology for Biomedical Engineers	4
EGRB 215	Computational Methods in Biomedical Engineering	3
EGRB 301	Biomedical Engineering Design Practicum	3
EGRB 307	Biomedical Instrumentation	4
EGRB 310	Biomechanics	4
EGRB 315	Device Design Methods	3
EGRB 401 & EGRB 402	Biomedical Engineering Senior Design Studio and Biomedical Engineering Senior Design Studio	6
EGRB 427	Biomaterials	3
EGRE 206	Electric Circuits	4
ENGR 395	Professional Development	1
• Additional major requirements		
EGRB 303 or EGRB 308	Biotransport Processes ¹ or Biomedical Signal Processing	3-4
• Major electives		
Science or engineering elective		3-4
Technical electives within declared track		21
Ancillary requirements		
EGRB 102	Introduction to Biomedical Engineering (satisfies AOI for scientific and logical reasoning)	3
CHEM 101	General Chemistry I	3
CHEZ 101	General Chemistry Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
STAT 210 or STAT 441	Basic Practice of Statistics or Applied Statistics for Engineers and Scientists	3
Open electives		
Select any course.		3
Total Hours		131

1

EGRB 303 is required for the cellular, tissue and regenerative engineering track; EGRB 308 is required for the biomedical instrumentation and imaging track.

The minimum number of credit hours required for this degree is 131.

Technical electives

Biomedical engineering students must select 21 credits of electives from one of the three technical elective tracks: cellular, tissue and regenerative engineering; biomechanics and rehabilitation engineering; or biomedical instrumentation and imaging.

Cellular, tissue and regenerative engineering track

Course	Title	Hours
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 310	Medicinal Chemistry and Drug Design	3
CHEM 403	Biochemistry I	3
CHEZ 301	Organic Chemistry Laboratory I	2
EGRB 403	Tissue Engineering	3
EGRB 410	Cellular Engineering	3
EGRB 411	Cell Mechanics and Mechanobiology	3
EGRB 412	Regenerative Engineering and Medicine	3
EGRB 491	Special Topics (When Appropriate)	1-4
EGRB 513	Cellular Signal Processing	3
EGRE 334	Introduction to Microfabrication	4
ENGR 497	Vertically Integrated Projects	1,2
or INNO 460	Product Innovation: da Vinci Project	
MATH 380	Introduction to Mathematical Biology	4

Biomechanics and rehabilitation engineering track

Course	Title	Hours
CMSC 245	Introduction to Programming Using C++	3
or CMSC 255	Introduction to Programming	
CMSC 246	Advanced Programming Using C++	3
or CMSC 256	Data Structures and Object Oriented Programming	
EGRB 405	Finite Element Analysis in Solid Mechanics	3
EGRB 406	Artificial Organs	3
EGRB 420	Assistive Technology	3
EGRB 421	Human Factors Engineering	3
EGRB 422	Human Performance Measurement Engineering	3
EGRB 423	Rehabilitation Engineering and Prostheses	3
EGRB 491	Special Topics (if subject is appropriate; see adviser for approval)	1-4
EGRB 524	Assistive Technology Design	3
EGMN 201	Dynamics and Kinematics	3
EGMN 416	Mechatronics	3
EGMN 420	CAE Design	3
EGMN 427	Robotics	3
EGMN 525	Feedback Control	3
ENGR 497	Vertically Integrated Projects	1,2

or INNO 460	Product Innovation: da Vinci Project	
PSYC 406	Perception	3
Biomedical instrumentation and imaging track		
Course	Title	Hours
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 409	Microcomputer Applications in Biomedical Engineering	3
EGRB 491	Special Topics (When appropriate)	1-4
EGRE 207	Electric Circuits II	4
EGRE 245	Engineering Programming	4
EGRE 246	Advanced Engineering Programming	3
EGRE 254	Digital Logic Design	4
EGRE 306	Introduction to Microelectronics	4
EGRE 307	Integrated Circuits	4
EGRE 334	Introduction to Microfabrication	4
EGRE 335	Signals and Systems	4
EGRE 337	Statistical Information Processing	3
EGRE 364	Microcomputer Systems	4
EGRE 365	Digital Systems	4
EGRE 454	Automatic Controls	4
ENGR 497	Vertically Integrated Projects	1,2
or INNO 460	Product Innovation: da Vinci Project	
PHYS 422	Optics	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I	3
CHEZ 101	General Chemistry Laboratory I	1
EGRB 101	Biomedical Engineering Practicum	2
EGRB 111	Introduction to Biological Systems in Engineering	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		16

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
EGRB 102	Introduction to Biomedical Engineering (satisfies general education AOI for scientific and logical reasoning)	3
EGRB 104	Introduction to Biomedical Engineering Laboratory	1
ENGR 395	Professional Development	1

MATH 201	Calculus with Analytic Geometry II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		

Term Hours: 16

Sophomore year

Fall semester		
EGRB 209	Applied Physiology for Biomedical Engineers	4
EGRE 206	Electric Circuits	4
MATH 301	Differential Equations	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5

Term Hours: 16

Spring semester

EGRB 203	Statics and Mechanics of Materials	3
EGRB 215	Computational Methods in Biomedical Engineering	3
MATH 310	Linear Algebra	3
PHYS 208	University Physics II	5
General education course (select BOK for social/behavioral sciences and AOI for global perspectives)		3

Term Hours: 17

Junior year

Fall semester		
EGRB 307	Biomedical Instrumentation	4
EGRB 310	Biomechanics	4
EGRB 427	Biomaterials	3
General education course (select BOK for humanities/fine arts and AOI for diversities in the human experience)		3
Technical elective		3

Term Hours: 17

Spring semester

EGRB 301	Biomedical Engineering Design Practicum	3
EGRB 303	Biotransport Processes	3-4
or EGRB 308	or Biomedical Signal Processing	
EGRB 315	Device Design Methods	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Science or engineering elective		3-4

Term Hours: 16

Senior year

Fall semester		
EGRB 401	Biomedical Engineering Senior Design Studio	3
STAT 210	Basic Practice of Statistics	3
or STAT 441	or Applied Statistics for Engineers and Scientists	
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Technical electives	9
Term Hours:	18
Spring semester	
EGRB 402 Biomedical Engineering Senior Design Studio	3
Open elective	3
Technical electives	9
Term Hours:	15
Total Hours:	131

The minimum total of credit hours required for this degree is 131.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Biomedical Engineering in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 155 credits rather than the 161 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in academia. The M.S. degree provides formal research experience and can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Minimum qualifications for admittance to the program include completion of 95 undergraduate credit hours including EGRB 303, EGRB 307, EGRB 308, EGRB 310 and EGRB 315; an overall GPA of 3.0; and a GPA of 3.2 in biomedical engineering course work. Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring of their junior year, but no later than June 15 of that year. A letter of endorsement from a prospective thesis adviser from the biomedical engineering faculty must accompany the application. The GRE is waived for admission to the program. Students who are interested in the accelerated program should consult with the faculty adviser to the biomedical engineering graduate program before they have completed 95 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the

undergraduate biomedical engineering adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Biomedical Engineering degree will be awarded upon completion of a minimum of 131 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will count as open or technical elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate biomedical engineering courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
EGRB 506	Artificial Organs	3
EGRB 507	Biomedical Electronics and Instrumentation	3
EGRB 509	Microcomputer Technology in the Biomedical Sciences	3
EGRB 511	Fundamentals of Biomechanics	3
EGRB 512	Regenerative Engineering and Medicine	3
EGRB 517	Cell Mechanics and Mechanobiology	3
EGRB 513	Cellular Signal Processing	3
EGRB 521	Human Factors Engineering	3
EGRB 591	Special Topics in Biomedical Engineering	1-4

Recommended plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the senior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Senior year		
Fall semester		
Required B.S. course work		
EGRB 401	Biomedical Engineering Senior Design Studio	3
STAT 210	Basic Practice of Statistics	3
or STAT 441	Applied Statistics for Engineers and Scientists	
Approved natural/physical sciences		3
Technical electives		6
EGRB 5XX (from list above, counted toward B.S. and M.S.)		3
Term Hours:		18
Spring semester		
Required B.S. course work		
EGRB 402	Biomedical Engineering Senior Design Studio	3
Technical electives		9
EGRB 5XX (from list above, counted toward B.S. and M.S.)		3
Term Hours:		15
Fifth year		

Fall semester		
EGRB 601	Numerical Methods and Modeling in Biomedical Engineering	4
EGRB 697	Directed Research in Biomedical Engineering	3
EGRB technical elective (500-level or above)		3
Open elective ¹		3
Term Hours:		13
Spring semester		
EGRB 602	Biomedical Engineering Systems Physiology	4
EGRB 690	Biomedical Engineering Research Seminar	1
EGRB 697	Directed Research in Biomedical Engineering	3
Open elective ¹		3
Term Hours:		11

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EGRB, EGMN, ENGR, PHYS, MATH, BIOL, PHIS or BIOC at 500-level or above

Department of Chemical and Life Science Engineering

B. Frank Gupton, Ph.D.

Research professor and chair

chemical.egr.vcu.edu (<https://egr.vcu.edu/departments/chemical/>)

Chemical and life science engineering represents the formal interaction of chemical engineering with the life sciences. VCU's Department of Chemical and Life Science Engineering is uniquely poised to bring these two premier disciplines together to form a program distinct in the nation. Programs are offered at the undergraduate and graduate levels.

Life science engineering – with interest areas including stem cell and stem cell-derived tissue engineering, biosciences/biotechnology, cellular engineering, biochips and biosensors, bioinformatics and molecular biocomputing, genetic and protein molecular engineering, environmental life science engineering, and molecular- and cellular-based therapeutics – is the fastest growing of all industries that currently employ engineers.

Chemical engineering and life science engineering share a broad range of common foundational knowledge bases, including the principles of mass and energy balances, transport phenomena and thermodynamics, surface and interfacial science, and reaction science and engineering. Strong academic and research programs in chemical and life science engineering will provide a wealth of exciting professional opportunities for successful graduates of the VCU program.

The bachelor's program offers concentrations in chemical engineering and life science engineering, and a chemical and life science engineering concentration is also available in the Master of Science in Engineering program, as well as the Ph.D. in Engineering program. The CLSE concentrations in the graduate-level programs are designed primarily for students who are interested in applying chemical and engineering principles toward important contemporary topics including process design, metabolic engineering, biosensor and biochip development, high-performance polymers in medicine and energy conversion, polymer

surface science, and environmentally benign polymer processing technologies. Major emphasis is placed on chemical and life science engineering fundamentals with additional emphasis on applied chemistry and life sciences.

- Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering (p. 91)
- Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering (p. 95)
- Chemical and life science engineering, minor in (p. 98)

Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering

The department offers a Bachelor of Science in Chemical and Life Science Engineering, and includes a chemical engineering concentration and a life science engineering concentration. Each student must choose the desired concentration upon initial registration.

As part of the B.S. degree in chemical and life science engineering, all students complete an approved internship or cooperative education experience.

Student learning outcomes

Upon completing this program, students will demonstrate:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies
8. An understanding of the hazards associated with physical, chemical and/or biological processes

Special requirements

Students must receive a grade of C in all engineering courses in order to graduate. Minimum grades of C in CLSE 115, CLSE 201 and CLSE 202 are required before students may take additional CLSE courses. After passing CLSE 202 with a minimum grade of C, students are allowed to continue with one D grade in any CLSE course. They must retake that course in order to graduate, but may continue taking other CLSE courses. Students are not allowed to continue with two grades of D in CLSE courses and

must successfully retake at least one of those courses with a minimum grade of C to take additional 300- and 400-level CLSE courses.

Degree requirements for Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CLSE 101	Introduction to Engineering	3
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	4
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	3
CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	3
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar)	1
• Additional major requirements		
Approved internship or cooperative education experience		0
ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	
or ENGR 498	Review of Cooperative Education Experience	
• Major electives		
Select engineering electives as described below.		6
Ancillary requirements		
BIOL 151	Introduction to Biological Sciences I	3
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4

CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Technical electives (Select 300+-level science, math, business or management courses as described below.)		9
Total Hours		126

The minimum number of credit hours required for this degree is 126.

Technical electives

Technical electives are satisfied by completing courses that meet all of the following criteria:

1. 300 level or greater
2. Offered in BIOC, BIOL, BIOZ, BNFO, BUSN, CHEM, CHEZ, ENVS, ENVZ, FRSC, FRSZ, INNO, LFSC, MATH, MEDC, MGMT, OPER, PHIS, or STAT
3. Three or more credit hours
4. Not otherwise required for the major by the effective Bulletin

Other courses may be used to satisfy the technical elective requirements with prior written approval from the department chair.

Engineering electives

Engineering electives are satisfied by completing courses that meet all of the following criteria:

1. 300-level or greater
2. Offered in the College of Engineering (CLSE, CMSC, EGMN, EGRB, EGRC, EGRE, EGRM, EGRN or ENGR)
3. Offered for three or more credit hours
4. Not otherwise required for the major by the effective Bulletin

Note: A minimum of four credits of ENGR 497 must be completed to use the course to satisfy an engineering elective requirement. Other courses may be used to satisfy the engineering elective requirements with prior written approval from the department chair.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
CLSE 101	Introduction to Engineering	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		14

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
ENGR 395	Professional Development	1
MATH 201	Calculus with Analytic Geometry II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		16

Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
MATH 301	Differential Equations	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
Term Hours:		17

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
Term Hours:		18

Summer semester

ENGR 396 or ENGR 398	Internship Experience or Cooperative Education Experience	0
Term Hours:		0

Junior year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	3
CLSE 301	Transport Phenomena I	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Engineering elective (300+ level)		3
Term Hours:		15

Spring semester

CLSE 302	Transport Phenomena II	4
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	3
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
STAT 441	Applied Statistics for Engineers and Scientists	3
Term Hours:		16

Senior year

Fall semester		Hours
CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	3
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 496 or ENGR 498	Internship Review or Review of Cooperative Education Experience	0
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
Technical elective (300+ level science, math, business or management course)		3
Term Hours:		15

Spring semester

CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar)	1
General education course (select AOI in creativity, innovation, and aesthetic inquiry)		3
Technical elective (300+ level science, math, business or management course)		3
Engineering elective (300+ level)		3

Engineering elective (300+ level)	3
Term Hours:	15
Total Hours:	126

The minimum number of credit hours required for this degree is 126.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Chemical and Life Science Engineering in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 150 credits rather than the 156 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in an academic setting. The M.S. degree provides formal research experience and can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

The minimum qualifications for admittance to the program include completion of 99 undergraduate credit hours including CLSE 301, CLSE 302, CLSE 305, CLSE 312, and CLSE 320; a minimum overall GPA of 3.0; and a GPA of 3.2 in chemical and life science engineering (CLSE) course work. Successful applicants will enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring of their junior year, but no later than June 15 of that year. One reference letter from a chemical and life science engineering faculty member must accompany the application. The GRE is waived for admission to the program. Students who are interested in the accelerated program should consult with the graduate program director before they have completed 99 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the CLSE undergraduate program director and the CLSE graduate program director.

Degree requirements

The Bachelor of Science in Chemical and Life Science Engineering degree will be awarded upon completion of a minimum of 126 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply as required major electives or open elective credits (engineering electives) for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Examples of graduate chemical and life science engineering courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
CLSE 543	Advanced Reaction Engineering	3
CLSE 544	Applied Transport Phenomena	3
CLSE 549	Process Biotechnology	3
CLSE 551	Nanotoxicology	3
CLSE 560	Protein Engineering	3
CLSE 561	Stem Cell Engineering	3
CLSE 562	Advanced Systems Biology Engineering	3
CLSE 563	Metabolic Engineering	3
CLSE 570	Molecular Physiology and Microanatomy for Chemical and Life Science Engineering	4
CLSE 575	Nanotechnology in Life Science and Engineering	3
CLSE 580	Sustainable Chemical Engineering	3
ENGR 591	Special Topics in Engineering	1-4

Recommended course sequence/plan of study

What follows is the recommended plan of graduate study for students interested in the accelerated program beginning in the fall of the senior year.

Course	Title	Hours
Senior year		
Fall semester		
Required B.S. course work		
CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	3
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 496	Internship Review	0
PHIL 201	Introduction to Ethics	3
Engineering elective - CLSE 5xx (from list above)		3
Term Hours:		15
Spring semester		
Required B.S. course work		
ECON 101	Introduction to Political Economy	3
ENGR 403	Senior Design Studio (Seminar)	1
CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
Engineering elective (300+ level)		3
Engineering elective - CLSE 5xx (from list above)		3
Term Hours:		12

Fifth year		
Fall semester		
CLSE 650	Quantitative Analysis in Chemical and Life Science Engineering	3
CLSE 655	Nonequilibrium Analysis in Chemical and Life Science Engineering	3
Graduate electives (500 and 600 level) ¹		6
Term Hours:		12
Spring semester		
CLSE 654	Equilibrium Analysis in Chemical and Biological Systems	3
CLSE 656	Advanced Chemical Reaction Engineering	3
Graduate electives (500 and 600 level) ¹		6
Term Hours:		12

1

For example: 500-level (or higher) CLSE, ENGR, PESC, PCEU, EGRB, CHEM, NANO, PHYS, MATH, BIOL, PHIS or BIOC courses

Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering

The department offers a Bachelor of Science in Chemical and Life Science Engineering, and includes a chemical engineering concentration and a life science engineering concentration. Each student must choose the desired concentration upon initial registration.

As part of the B.S. degree in chemical and life science engineering, all students complete an approved internship or cooperative education experience.

Student learning outcomes

Upon completing this program, students will demonstrate:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

8. An understanding of the hazards associated with physical, chemical and/or biological processes

Special requirements

Students must receive a grade of C in all engineering courses in order to graduate. Minimum grades of C in CLSE 115, CLSE 201 and CLSE 202 are required before students may take additional CLSE courses. After passing CLSE 202 with a minimum grade of C, students are allowed to continue with one D grade in any CLSE course. They must retake that course in order to graduate, but may continue taking other CLSE courses. Students are not allowed to continue with two grades of D in CLSE courses and must successfully retake at least one of those courses with a minimum grade of C to take additional 300- and 400-level CLSE courses.

Degree requirements for Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CLSE 101	Introduction to Engineering	3
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	4
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	3
CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	3
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar)	1
• Additional major requirements		
Approved internship or cooperative education experience		0
ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	

or ENGR 498	Review of Cooperative Education Experience	
• Major electives		
Select engineering electives as described below.		9
Ancillary requirements		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152	Introduction to Biological Sciences II	3
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Total Hours		127

The minimum number of credit hours required for this degree is 127.

Engineering electives

Engineering electives are satisfied by completing courses that meet all of the following criteria:

1. 300-level or greater
2. Offered in the College of Engineering (CLSE, CMSC, EGMN, EGRB, EGRC, EGRE, EGRM, EGRN or ENGR)
3. Offered for three or more credit hours
4. Not otherwise required for the major by the effective Bulletin

Note: A minimum of four credits of ENGR 497 must be completed to satisfy an engineering elective requirement. Other courses may be

used to satisfy the requirements with prior written approval from the department chair.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
CLSE 101	Introduction to Engineering	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
Term Hours:		14

Spring semester		Hours
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
ENGR 395	Professional Development	1
MATH 201	Calculus with Analytic Geometry II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
Term Hours:		16

Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
MATH 301	Differential Equations	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
Term Hours:		17

Spring semester		Hours
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
Term Hours:		18

Summer semester

ENGR 396 or ENGR 398	Internship Experience or Cooperative Education Experience	0
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Term Hours: 0

Junior year**Fall semester**

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
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CLSE 301	Transport Phenomena I	3
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CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
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ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
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UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
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Term Hours: 16

Spring semester

BIOL 152	Introduction to Biological Sciences II	3
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CLSE 302	Transport Phenomena II	4
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CLSE 312	Chemical Reaction Engineering	3
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CLSE 320	Instrumentation Laboratory	3
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STAT 441	Applied Statistics for Engineers and Scientists	3
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Term Hours: 16

Senior year**Fall semester**

CHEM 403	Biochemistry I	3
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CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
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CLSE 409	Process Control in Chemical and Life Science Engineering	3
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CLSE 440	Unit Operations Laboratory	3
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ENGR 402	Senior Design Studio (Seminar)	1
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ENGR 496 or ENGR 498	Internship Review or Review of Cooperative Education Experience	0
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PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
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Term Hours: 15

Spring semester

CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
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ENGR 403	Senior Design Studio (Seminar)	1
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General education course (select AOI for creativity, innovation, and aesthetic inquiry)		3
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Engineering electives (300+ level)		9
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Term Hours: 15

Total Hours: 127

The minimum number of credit hours required for this degree is 127.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Chemical and Life Science Engineering in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 150 credits rather than the 156 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in an academic setting. The M.S. degree provides formal research experience and can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

The minimum qualifications for admittance to the program include completion of 99 undergraduate credit hours including CLSE 301, CLSE 302, CLSE 305, CLSE 312, and CLSE 320; a minimum overall GPA of 3.0; and a GPA of 3.2 in chemical and life science engineering (CLSE) course work. Successful applicants will enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring of their junior year, but no later than June 15 of that year. One reference letter from a chemical and life science engineering faculty member must accompany the application. The GRE is waived for admission to the program. Students who are interested in the accelerated program should consult with the graduate program director before they have completed 99 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the CLSE undergraduate program director and the CLSE graduate program director.

Degree requirements

The Bachelor of Science in Chemical and Life Science Engineering degree will be awarded upon completion of a minimum of 126 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply as required major electives or open elective credits (engineering electives) for the undergraduate degree. These courses are shared credits

with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Examples of graduate chemical and life science engineering courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
CLSE 543	Advanced Reaction Engineering	3
CLSE 544	Applied Transport Phenomena	3
CLSE 549	Process Biotechnology	3
CLSE 551	Nanotoxicology	3
CLSE 560	Protein Engineering	3
CLSE 561	Stem Cell Engineering	3
CLSE 562	Advanced Systems Biology Engineering	3
CLSE 563	Metabolic Engineering	3
CLSE 570	Molecular Physiology and Microanatomy for Chemical and Life Science Engineering	4
CLSE 575	Nanotechnology in Life Science and Engineering	3
CLSE 580	Sustainable Chemical Engineering	3
ENGR 591	Special Topics in Engineering	1-4

Recommended course sequence/plan of study

What follows is the recommended plan of graduate study for students interested in the accelerated program beginning in the fall of the senior year.

Course	Title	Hours
Senior year		
Fall semester		
Required B.S. course work		
CLSE 402	Senior Design Studio I (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	3
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 496	Internship Review	0
PHIL 201	Introduction to Ethics	3
Engineering elective - CLSE 5xx (from list above)		3
Term Hours:		15
Spring semester		
Required B.S. course work		
ECON 101	Introduction to Political Economy	3
ENGR 403	Senior Design Studio (Seminar)	1
CLSE 403	Senior Design Studio II (Laboratory/Project Time)	2
Engineering elective (300+ level)		3
Engineering elective - CLSE 5xx (from list above)		3
Term Hours:		12
Fifth year		
Fall semester		
CLSE 650	Quantitative Analysis in Chemical and Life Science Engineering	3

CLSE 655	Nonequilibrium Analysis in Chemical and Life Science Engineering	3
Graduate electives (500 and 600 level) ¹		6
Term Hours:		12
Spring semester		
CLSE 654	Equilibrium Analysis in Chemical and Biological Systems	3
CLSE 656	Advanced Chemical Reaction Engineering	3
Graduate electives (500 and 600 level) ¹		6
Term Hours:		12

¹

For example: 500-level (or higher) CLSE, ENGR, PESC, PCEU, EGRB, CHEM, NANO, PHYS, MATH, BIOL, PHIS or BIOC courses

Chemical and life science engineering, minor in

The minor in chemical and life science engineering consists of 20 credits and requires completion of these courses:

Course	Title	Hours
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
Total Hours		20

Department of Computer Science

Krzysztof J. Cios, Ph.D.

Professor and chair

egr.vcu.edu/departments/computer (<https://egr.vcu.edu/departments/computer/>)

The Department of Computer Science offers undergraduate and graduate programs. The Bachelor of Science in Computer Science is a rigorous, highly concentrated curriculum of computer science courses. It includes advanced study in several important areas of computer science and provides a strong foundation in this discipline. Every course is taught by full-time faculty members who also serve as advisers to both undergraduate and graduate students.

The master's degree program emphasizes continuing self-development of individuals currently engaged in science-, technology- and engineering-related fields. It prepares persons who have completed undergraduate majors in these fields for entry into careers in areas that use computing technology. Both the theoretical and applied aspects of computer science are emphasized in this program. The program offers courses in a wide range of areas in computer science, including machine learning,

artificial intelligence, cybersecurity and cloud computing, data mining, bioinformatics, and medical informatics.

- Computer Science, Bachelor of Science (B.S.) (p. 99)
- Computer Science, Bachelor of Science (B.S.) with a concentration in cybersecurity (p. 103)
- Computer Science, Bachelor of Science (B.S.) with a concentration in data science (p. 107)
- Computer Science, Bachelor of Science (B.S.) with a concentration in software engineering (p. 111)
- Computer science, minor in (p. 117)
- Computer Science, Certificate in (Post-baccalaureate undergraduate certificate) (p. 116)
- Fundamentals of Computing (Baccalaureate certificate) (p. 116)

Computer Science, Bachelor of Science (B.S.)

The Bachelor of Science in Computer Science is built on a rigorous, highly concentrated, accredited curriculum of computer science courses, and includes concentrations in cybersecurity, data science and software engineering. The program provides a strong foundation in the discipline and includes advanced study in several important areas of computer science.

The degree requires a minimum of 120 credit hours and includes undergraduate requirements, general education requirements and computer science major requirements.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Special requirements

Students must receive a minimum grade of C in all computer science courses in order to graduate.

Degree requirements for Computer Science, Bachelor of Science (B.S.)

Course	Title	Hours
	General education (p. 77)	
	Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.	30

Major requirements

• Major core requirements		
CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 257	Computer Systems	4
CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 440	Data Communication and Networking	3
CMSC 451 & CMSC 452	Senior Project I and Senior Project II	6
CMSC 508	Database Theory	3
• Major electives		
	CMSC upper-level electives	9
Ancillary requirements		
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
	Humanities electives (from list below)	6
	MATH courses (300 to 400 level)	6
	Natural science option: Select from BIOL, CHEM or PHYS sequence (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning) ¹	8-10
	Natural science electives (BIOL, CHEM or PHYS courses that count toward the major in that science)	6
Open electives		
	Select any course.	3-5
	Total Hours	120

¹

Select one of the following options:

- Option A: CHEM 101 and CHEZ 101 and CHEM 102 and CHEZ 102
- Option B: PHYS 207 and PHYS 208
- Option C: BIOL 151 and BIOZ 151 and BIOL 152 and BIOZ 152

The minimum number of credit hours required for this degree is 120.

CMSC upper-level electives

Course	Title	Hours
CMSC 409	Artificial Intelligence	3
CMSC 410	Introduction to Quantum Computing	3
CMSC 411	Computer Graphics	3
CMSC 412	Social Network Analysis and Cybersecurity Risks	3
CMSC 413	Introduction to Cybersecurity	3
CMSC 414	Computer and Network Security	3
CMSC 415	Introduction to Cryptography	3
CMSC 416	Introduction to Natural Language Processing	3
CMSC 420	Software Project Management	3
CMSC 425	Introduction to Software Analysis and Testing	3
CMSC 428	Mobile Programming: iOS	3
CMSC 435	Introduction to Data Science	3
CMSC 455	Software as a Service	3
CMSC 475	Design and Implementation of User Interfaces	3
CMSC 491	Topics in Computer Science	1-3
CMSC 492	Independent Study	2-4
CMSC 506	Computer Networks and Communications	3

Approved humanities electives

Course	Title	Hours
Select six credits from the following programs or subject areas:		6
African-American studies		
American studies		
Anthropology		
School of the Arts		
English		
Foreign language		
History		
Philosophy		
Psychology		
Religious studies		
Social work		
Sociology		
Urban studies		

Some courses in other programs (including most honors modules and other courses that focus on human behavior, communication and/or social interaction) may be counted toward this requirement with departmental approval.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
CMSC 255	Introduction to Programming	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education courses		6
Humanities elective (from list)		3

Term Hours: 16**Spring semester**

CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	

Term Hours: 17**Sophomore year**

Fall semester	Hours	
CMSC 257	Computer Systems	4
CMSC 355	Fundamentals of Software Engineering	3
MATH 201	Calculus with Analytic Geometry II	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK for humanities/fine arts)		3

Term Hours: 17**Spring semester**

CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
STAT 212	Concepts of Statistics	3
General education course		3
Humanities electives (from list)		3

Term Hours: 15**Junior year**

Fall semester	Hours	
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Natural science option (satisfies general education BOK for natural science and AOI for scientific and logical reasoning) (select one):		3-5

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
PHYS 207	University Physics I	5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4

Term Hours: 13-14

Spring semester

CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH course (300 to 400 level)		3
Natural science option (select one):		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
PHYS 208	University Physics II	5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4

Term Hours: 13-14

Senior year

Fall semester

CMSC 451	Senior Project I	3
CMSC upper-level electives		6
MATH course (300 to 400 level)		3
Natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3

Term Hours: 15

Spring semester

CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC upper-level elective		3
Open electives		3-5

Term Hours: 14

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Computer Science in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

The program is designed to develop skills and educate computer science students to be major contributors in the computing industry. The graduate program in computer science provides state-of-the-art education through the use of didactic courses to those students who wish to further their knowledge and careers within the computing industry. The program emphasizes continuing self-development and broadening of the knowledge of individuals currently engaged in science, technology and engineering-related fields. It also prepares persons who have completed undergraduate majors in these fields for entry into a career in the numerous areas that use computing technology. Both the

theoretical and applied aspects of computer science are emphasized in this program.

Admission to the program

Minimum qualifications for admittance to the program include completion of 30 undergraduate credit hours including six computer science courses CMSC 255 (<http://bulletin.vcu.edu/search/?P=CMSC%20255>), CMSC 256 (<http://bulletin.vcu.edu/search/?P=CMSC%20256>), CMSC 257 (<http://bulletin.vcu.edu/search/?P=CMSC%20257>), CMSC 302 (<http://bulletin.vcu.edu/search/?P=CMSC%20302>), CMSC 303 (<http://bulletin.vcu.edu/search/?P=CMSC%20303>) and CMSC 311 (<http://bulletin.vcu.edu/search/?P=CMSC%20311>); an overall GPA of 3.0; and a GPA of 3.4 in the six courses identified above. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with the faculty advisers to both the undergraduate and graduate computer science programs before they have completed the six undergraduate courses listed above. By the end of their junior year, undergraduate students must secure approval for joining the accelerated program from the undergraduate program director for computer science. Students must have approval from the undergraduate program director to participate in an accelerated program and must apply for admission to the master's program immediately following the spring of their junior year, but no later than May 31 of that year, prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study.

Three reference letters (including one from the computer science undergraduate program director and at least one more from a computer science faculty member) must accompany the application. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, with the minimum major GPA of 3.2, students are fully admitted to the master's program. To graduate with the M.S. in Computer Science, students will meet graduation requirements of the degree as presented in the bulletin that is effective at the time of their full admission to the master's program.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate computer science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Computer Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. At most, six of these graduate credits will substitute for open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate computer science courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
Use course picker to select shared courses. Maximum for shared credits is 12.		
CMSC 501	Advanced Algorithms	3
CMSC 502	Parallel Algorithms	3
CMSC 510	Regularization Methods for Machine Learning	3
CMSC 516	Advanced Natural Language Processing	3
CMSC 525	Introduction to Software Analysis, Testing and Verification	3
CMSC 591	Topics in Computer Science	3
Total Hours		18

Recommended course sequence/plan of study for students pursuing a thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3

Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Secure approval from undergraduate program director		
Apply to the M.S. program		
Term Hours:		13-14
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3
Term Hours:		15
Spring semester		
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)		3
Choose the M.S. thesis adviser		
Term Hours:		12
Fifth year		
Fall semester		
CMSC 697	Directed Research	3
M.S. foundational area courses (theory and systems) ¹		6
Term Hours:		9
Spring semester		
CMSC 697	Directed Research	6
M.S. foundational area course (applied) ¹		3
Term Hours:		9

¹

See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Recommended course sequence/plan of study for students pursuing a non-thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3

CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Term Hours:		13-14
Secure approval from the undergraduate program director		
Apply to the M.S. program		
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3
Term Hours:		15
Spring semester		
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)		3
Term Hours:		12
Fifth year		
Fall semester		
M.S. foundational area courses (theory, systems and applied) ¹		9
Term Hours:		9
Spring semester		
Graduate didactic course work		9
Term Hours:		9

1

See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Computer Science, Bachelor of Science (B.S.) with a concentration in cybersecurity

The Bachelor of Science in Computer Science is built on a rigorous, highly concentrated, accredited curriculum of computer science courses, and includes concentrations in cybersecurity, data science and software engineering. The program provides a strong foundation in the discipline and includes advanced study in several important areas of computer science.

The degree requires a minimum of 120 credit hours and includes undergraduate requirements, general education requirements and computer science major requirements.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Special requirements

Students must receive a minimum grade of C in all computer science courses in order to graduate

Degree requirements for Computer Science, Bachelor of Science (B.S.) with a concentration in cybersecurity

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 257	Computer Systems	4
CMSC 302	Introduction to Discrete Structures	3

CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 440	Data Communication and Networking	3
CMSC 451 & CMSC 452	Senior Project I and Senior Project II	6
CMSC 508	Database Theory	3
• Concentration requirements		
CMSC 413	Introduction to Cybersecurity	3
CMSC 414	Computer and Network Security	3
CMSC 415	Introduction to Cryptography	3
Ancillary requirements		
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
Humanities electives (from list below)		6
MATH courses (300- to 400-level)		6
Natural science option: Select from BIOL, CHEM or PHYS sequence (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning) ¹		8-10
Natural science electives (BIOL, CHEM or PHYS courses that count toward the major in that science)		6
Open electives		
Select any course.		3-5
Total Hours		120

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Select one of the following options:

- Option A: CHEM 101 and CHEZ 101 and CHEM 102 and CHEZ 102
- Option B: PHYS 207 and PHYS 208
- Option C: BIOL 151 and BIOZ 151 and BIOL 152 and BIOZ 152

The minimum number of credit hours required for this degree is 120.

Approved humanities electives

Course	Title	Hours
Select six credits from the following programs or subject areas:		
	African-American studies	6
	American studies	
	Anthropology	
	School of the Arts	

English
Foreign language
History
Philosophy
Psychology
Religious studies
Social work
Sociology
Urban studies

Some courses in other programs (including most honors modules and other courses that focus on human behavior, communication and/or social interaction) may be counted toward this requirement with departmental approval.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
CMSC 255	Introduction to Programming	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education courses		6
Humanities elective (from list)		3
Term Hours:		16
Spring semester		
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		17
Sophomore year		
Fall semester		
CMSC 257	Computer Systems	4
CMSC 355	Fundamentals of Software Engineering	3
MATH 201	Calculus with Analytic Geometry II	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK for humanities/fine arts)		3
Term Hours:		17

Spring semester

CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
STAT 212	Concepts of Statistics	3
General education course		3
Humanities elective (from list)		3

Term Hours: 15

Junior year**Fall semester**

CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3

Natural science option (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning)(select one):

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
PHYS 207	University Physics I	5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4

Term Hours: 13-14

Spring semester

CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH course (300- to 400-level)		3
Natural science option (select one):		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
PHYS 208	University Physics II	5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4

Term Hours: 13-14

Senior year**Fall semester**

CMSC 413	Introduction to Cybersecurity	3
CMSC 415	Introduction to Cryptography	3
CMSC 451	Senior Project I (capstone)	3
MATH course (300- to 400-level)		3
Natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3

Term Hours: 15

Spring semester

CMSC 414	Computer and Network Security	3
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II (capstone)	3
Open electives		3-5

Term Hours: 14

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Computer Science in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

The program is designed to develop skills and educate computer science students to be major contributors in the computing industry. The graduate program in computer science provides state-of-the-art education through the use of didactic courses to those students who wish to further their knowledge and careers within the computing industry. The program emphasizes continuing self-development and broadening of the knowledge of individuals currently engaged in science, technology and engineering-related fields. It also prepares persons who have completed undergraduate majors in these fields for entry into a career in the numerous areas that use computing technology. Both the theoretical and applied aspects of computer science are emphasized in this program.

Admission to the program

Minimum qualifications for admittance to the program include completion of 30 undergraduate credit hours including six computer science courses CMSC 255 (<http://bulletin.vcu.edu/search/?P=CMSC%20255>), CMSC 256 (<http://bulletin.vcu.edu/search/?P=CMSC%20256>), CMSC 257 (<http://bulletin.vcu.edu/search/?P=CMSC%20257>), CMSC 302 (<http://bulletin.vcu.edu/search/?P=CMSC%20302>), CMSC 303 (<http://bulletin.vcu.edu/search/?P=CMSC%20303>) and CMSC 311 (<http://bulletin.vcu.edu/search/?P=CMSC%20311>); an overall GPA of 3.0; and a GPA of 3.4 in the six courses identified above. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with the faculty advisers to both the undergraduate and graduate computer science programs before they have completed the six undergraduate courses listed above. By the end of their junior year, undergraduate students must secure approval for joining the accelerated program from the undergraduate program director for computer science. Students must have approval from the undergraduate program director to participate in an accelerated program and must apply for admission to the master's program immediately following the spring of their junior year, but no later than May 31 of that year, prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will

be the next available admission term following the last semester of undergraduate study.

Three reference letters (including one from the computer science undergraduate program director and at least one more from a computer science faculty member) must accompany the application. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, with the minimum major GPA of 3.2, students are fully admitted to the master's program. To graduate with the M.S. in Computer Science, students will meet graduation requirements of the degree as presented in the bulletin that is effective at the time of their full admission to the master's program.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate computer science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Computer Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. At most, six of these graduate credits will substitute for open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate computer science courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
Use course picker to select shared courses. Maximum for shared credits is 12.		
CMSC 501	Advanced Algorithms	3
CMSC 502	Parallel Algorithms	3
CMSC 510	Regularization Methods for Machine Learning	3
CMSC 516	Advanced Natural Language Processing	3
CMSC 525	Introduction to Software Analysis, Testing and Verification	3
CMSC 591	Topics in Computer Science	3
Total Hours		18

Recommended course sequence/plan of study for students pursuing a thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Secure approval from undergraduate program director		
Apply to the M.S. program		
Term Hours:		13-14
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3
Term Hours:		15
Spring semester		
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)		3
Choose the M.S. thesis adviser		
Term Hours:		12
Fifth year		
Fall semester		
CMSC 697	Directed Research	3
M.S. foundational area courses (theory and systems) ¹		6

Term Hours:	9
Spring semester	
CMSC 697 Directed Research	6
M.S. foundational area course (applied) ¹	3
Term Hours:	9

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See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Recommended course sequence/plan of study for students pursuing a non-thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
	Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)	3
	Select one of the following:	4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
	Select one of the following:	4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Term Hours:		13-14
Secure approval from the undergraduate program director		
Apply to the M.S. program		
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
	Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)	3
CMSC 501	Advanced Algorithms	3

CMSC 516	Advanced Natural Language Processing	3
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Term Hours:	15
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Spring semester

CMSC 440	Data Communication and Networking	3
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CMSC 452	Senior Project II	3
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CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
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Fourth graduate course (counts toward B.S. and M.S.)	3
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Term Hours:	12
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Fifth year

Fall semester

M.S. foundational area courses (theory, systems and applied) ¹	9
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Term Hours:	9
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Spring semester

Graduate didactic course work	9
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Term Hours:	9
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See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Computer Science, Bachelor of Science (B.S.) with a concentration in data science

The Bachelor of Science in Computer Science is built on a rigorous, highly concentrated, accredited curriculum of computer science courses, and includes concentrations in cybersecurity, data science and software engineering. The program provides a strong foundation in the discipline and includes advanced study in several important areas of computer science.

The degree requires a minimum of 120 credit hours and includes undergraduate requirements, general education requirements and computer science major requirements.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Special requirements

Students must receive a minimum grade of C in all computer science courses in order to graduate

Degree requirements for Computer Science, Bachelor of Science (B.S.) with a concentration in data science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 257	Computer Systems	4
CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 440	Data Communication and Networking	3
CMSC 451 & CMSC 452	Senior Project I and Senior Project II	6
CMSC 508	Database Theory	3
• Concentration requirements		
CMSC 409	Artificial Intelligence	3
CMSC 416	Introduction to Natural Language Processing	3
CMSC 435	Introduction to Data Science	3
Ancillary requirements		
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
Humanities electives (from list below)		6
MATH courses (300- to 400-level)		6
Natural science option: Select from BIOL, CHEM or PHYS sequence (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning) ¹		8-10
Natural science electives (BIOL, CHEM or PHYS courses that count toward the major in that science)		6

Open electives

Select any course.	3-5
Total Hours	120

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Select one of the following options:

- Option A: CHEM 101 and CHEZ 101 and CHEM 102 and CHEZ 102
- Option B: PHYS 207 and PHYS 208
- Option C: BIOL 151 and BIOZ 151 and BIOL 152 and BIOZ 152

The minimum number of credit hours required for this degree is 120.

Approved humanities electives

Course	Title	Hours
Select six credits from the following programs or subject areas:		
	African-American studies	6
	American studies	
	Anthropology	
	School of the Arts	
	English	
	Foreign language	
	History	
	Philosophy	
	Psychology	
	Religious studies	
	Social work	
	Sociology	
	Urban studies	

Some courses in other programs (including most honors modules and other courses that focus on human behavior, communication and/or social interaction) may be counted toward this requirement with departmental approval.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
CMSC 255 Introduction to Programming	4
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education courses	6
Humanities elective (from list)	3

Term Hours: 16

Spring semester

CMSC 256 Data Structures and Object Oriented Programming	4
CMSC 302 Introduction to Discrete Structures	3

ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		17

Sophomore year**Fall semester**

CMSC 257	Computer Systems	4
CMSC 355	Fundamentals of Software Engineering	3
MATH 201	Calculus with Analytic Geometry II	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK for humanities/fine arts)		3
Term Hours:		17

Spring semester

CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
STAT 212	Concepts of Statistics	3
General education course		3
Humanities elective (from list)		3
Term Hours:		15

Junior year**Fall semester**

CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3
Natural science option (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning)(select one):		3-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
PHYS 207	University Physics I	5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
Term Hours:		13-14

Spring semester

CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH course (300- to 400-level)		3
Natural science option (select one):		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
PHYS 208	University Physics II	5

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Term Hours:		13-14

Senior year**Fall semester**

CMSC 409	Artificial Intelligence	3
CMSC 435	Introduction to Data Science	3
CMSC 451	Senior Project I (capstone)	3
MATH course (300- to 400-level)		3
Natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3
Term Hours:		15

Spring semester

CMSC 416	Introduction to Natural Language Processing	3
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II (capstone)	3
Open electives		3-5
Term Hours:		14
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Computer Science in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

The program is designed to develop skills and educate computer science students to be major contributors in the computing industry. The graduate program in computer science provides state-of-the-art education through the use of didactic courses to those students who wish to further their knowledge and careers within the computing industry. The program emphasizes continuing self-development and broadening of the knowledge of individuals currently engaged in science, technology and engineering-related fields. It also prepares persons who have completed undergraduate majors in these fields for entry into a career in the numerous areas that use computing technology. Both the theoretical and applied aspects of computer science are emphasized in this program.

Admission to the program

Minimum qualifications for admittance to the program include completion of 30 undergraduate credit hours including six computer science courses CMSC 255 (<http://bulletin.vcu.edu/search/?P=CMSC%20255>), CMSC 256 (<http://bulletin.vcu.edu/search/?P=CMSC%20256>), CMSC 257 (<http://bulletin.vcu.edu/search/?P=CMSC%20257>), CMSC 302 (<http://bulletin.vcu.edu/search/?P=CMSC%20302>), CMSC 303 (<http://bulletin.vcu.edu/search/?P=CMSC%20303>) and CMSC 311 (<http://bulletin.vcu.edu/search/?P=CMSC%20311>); an overall GPA of 3.0; and a GPA of 3.4 in the six courses identified above. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the

minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with the faculty advisers to both the undergraduate and graduate computer science programs before they have completed the six undergraduate courses listed above. By the end of their junior year, undergraduate students must secure approval for joining the accelerated program from the undergraduate program director for computer science. Students must have approval from the undergraduate program director to participate in an accelerated program and must apply for admission to the master's program immediately following the spring of their junior year, but no later than May 31 of that year, prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study.

Three reference letters (including one from the computer science undergraduate program director and at least one more from a computer science faculty member) must accompany the application. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, with the minimum major GPA of 3.2, students are fully admitted to the master's program. To graduate with the M.S. in Computer Science, students will meet graduation requirements of the degree as presented in the bulletin that is effective at the time of their full admission to the master's program.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate computer science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Computer Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. At most, six of these graduate credits will substitute for open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate computer science courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
Use course picker to select shared courses. Maximum for shared credits is 12.		
CMSC 501	Advanced Algorithms	3
CMSC 502	Parallel Algorithms	3
CMSC 510	Regularization Methods for Machine Learning	3
CMSC 516	Advanced Natural Language Processing	3
CMSC 525	Introduction to Software Analysis, Testing and Verification	3
CMSC 591	Topics in Computer Science	3
Total Hours		18

Recommended course sequence/plan of study for students pursuing a thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
	Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)	3
	Select one of the following:	4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
	Term Hours:	13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
	MATH upper-level (300 to 400)	3
	Select one of the following:	4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Secure approval from undergraduate program director		
Apply to the M.S. program		
	Term Hours:	13-14
Senior year		
Fall semester		
CMSC 451	Senior Project I	3

MATH upper-level (300 to 400)	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)	3
CMSC 501 Advanced Algorithms	3
CMSC 516 Advanced Natural Language Processing	3
Term Hours:	15
Spring semester	
CMSC 440 Data Communication and Networking	3
CMSC 452 Senior Project II	3
CMSC 525 Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)	3
Choose the M.S. thesis adviser	
Term Hours:	12
Fifth year	
Fall semester	
CMSC 697 Directed Research	3
M.S. foundational area courses (theory and systems) ¹	6
Term Hours:	9
Spring semester	
CMSC 697 Directed Research	6
M.S. foundational area course (applied) ¹	3
Term Hours:	9

¹

See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Recommended course sequence/plan of study for students pursuing a non-thesis master’s

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		

CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	

Term Hours: 13-14
Secure approval from the undergraduate program director
Apply to the M.S. program

Senior year

Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3

Term Hours: 15

Spring semester

CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3

Fourth graduate course (counts toward B.S. and M.S.) 3

Term Hours: 12

Fifth year

Fall semester		
M.S. foundational area courses (theory, systems and applied) ¹		9

Term Hours: 9

Spring semester	Graduate didactic course work	9
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Term Hours: 9

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See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Computer Science, Bachelor of Science (B.S.) with a concentration in software engineering

The Bachelor of Science in Computer Science is built on a rigorous, highly concentrated, accredited curriculum of computer science courses, and includes concentrations in cybersecurity, data science and software engineering. The program provides a strong foundation in the discipline

and includes advanced study in several important areas of computer science.

The degree requires a minimum of 120 credit hours and includes undergraduate requirements, general education requirements and computer science major requirements.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
6. Apply computer science theory and software development fundamentals to produce computing-based solutions

Special requirements

Students must receive a minimum grade of C in all computer science courses in order to graduate. graduate

Degree requirements for Computer Science, Bachelor of Science (B.S.) with a concentration in software engineering

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 257	Computer Systems	4
CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 440	Data Communication and Networking	3
CMSC 451 & CMSC 452	Senior Project I and Senior Project II	6
CMSC 508	Database Theory	3
• Concentration requirements		

Choose three from: 9

CMSC 420	Software Project Management	
CMSC 425	Introduction to Software Analysis and Testing	
CMSC 455	Software as a Service	
CMSC 475	Design and Implementation of User Interfaces	

Ancillary requirements

ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
Humanities electives (from list below)		6
MATH courses (300- to 400-level)		6
Natural science option: Select from BIOL, CHEM or PHYS sequence (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning) ¹		8-10
Natural science electives (BIOL, CHEM or PHYS courses that count toward the major in that science)		6

Open electives

Select any course. 3-5

Total Hours 120

1

Select one of the following options:

- Option A: CHEM 101 and CHEZ 101 and CHEM 102 and CHEZ 102
- Option B: PHYS 207 and PHYS 208
- Option C: BIOL 151 and BIOZ 151 and BIOL 152 and BIOZ 152

The minimum number of credit hours required for this degree is 120.

Approved humanities electives

Course	Title	Hours
Select six credits from the following programs or subject areas:		6
	African-American studies	
	American studies	
	Anthropology	
	School of the Arts	
	English	
	Foreign language	
	History	
	Philosophy	
	Psychology	
	Religious studies	
	Social work	

Sociology

Urban studies

Some courses in other programs (including most honors modules and other courses that focus on human behavior, communication and/or social interaction) may be counted toward this requirement with departmental approval.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CMSC 255	Introduction to Programming	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education courses	6
	Humanities elective (from list)	3
Term Hours:		16

Spring semester

CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral science and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
Term Hours:		17

Sophomore year

Fall semester		Hours
CMSC 257	Computer Systems	4
CMSC 355	Fundamentals of Software Engineering	3
MATH 201	Calculus with Analytic Geometry II	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course (select BOK for humanities/fine arts)	3
Term Hours:		17

Spring semester

CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
STAT 212	Concepts of Statistics	3
	General education course	3
	Humanities elective (from list)	3
Term Hours:		15

Junior year**Fall semester**

CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
	Natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)	3
	Natural science option (3-5 credits satisfy general education BOK for natural science and AOI for scientific and logical reasoning)(select one):	3-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
PHYS 207	University Physics I	5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
Term Hours:		13-14

Spring semester

CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
	MATH course (300- to 400-level)	3
	Natural science option (select one):	4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
PHYS 208	University Physics II	5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Term Hours:		13-14

Senior year**Fall semester**

CMSC 451	Senior Project I	3
CMSC 420	Software Project Management or Software as a Service	3
CMSC 455		
	MATH course (300- to 400-level)	3
	Natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)	3
Term Hours:		12

Spring semester

CMSC 425	Introduction to Software Analysis and Testing	3
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 475	Design and Implementation of User Interfaces	3
	Open electives	3-5
Term Hours:		17
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Computer Science in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

The program is designed to develop skills and educate computer science students to be major contributors in the computing industry. The graduate program in computer science provides state-of-the-art education through the use of didactic courses to those students who wish to further their knowledge and careers within the computing industry. The program emphasizes continuing self-development and broadening of the knowledge of individuals currently engaged in science, technology and engineering-related fields. It also prepares persons who have completed undergraduate majors in these fields for entry into a career in the numerous areas that use computing technology. Both the theoretical and applied aspects of computer science are emphasized in this program.

Admission to the program

Minimum qualifications for admittance to the program include completion of 30 undergraduate credit hours including six computer science courses CMSC 255 (<http://bulletin.vcu.edu/search/?P=CMSC%20255>), CMSC 256 (<http://bulletin.vcu.edu/search/?P=CMSC%20256>), CMSC 257 (<http://bulletin.vcu.edu/search/?P=CMSC%20257>), CMSC 302 (<http://bulletin.vcu.edu/search/?P=CMSC%20302>), CMSC 303 (<http://bulletin.vcu.edu/search/?P=CMSC%20303>) and CMSC 311 (<http://bulletin.vcu.edu/search/?P=CMSC%20311>); an overall GPA of 3.0; and a GPA of 3.4 in the six courses identified above. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with the faculty advisers to both the undergraduate and graduate computer science programs before they have completed the six undergraduate courses listed above. By the end of their junior year, undergraduate students must secure approval for joining the accelerated program from the undergraduate program director for computer science. Students must have approval from the undergraduate program director to participate in an accelerated program and must apply for admission to the master's program immediately following the spring of their junior year, but no later than May 31 of that year, prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study.

Three reference letters (including one from the computer science undergraduate program director and at least one more from a computer science faculty member) must accompany the application. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, with the minimum major GPA of 3.2, students are fully admitted to the master's program. To graduate with the M.S. in Computer Science, students will meet graduation requirements of the degree as presented in the bulletin that is effective at the time of their full admission to the master's program.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate computer science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Computer Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. At most, six of these graduate credits will substitute for open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate computer science courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
Use course picker to select shared courses. Maximum for shared credits is 12.		
CMSC 501	Advanced Algorithms	3
CMSC 502	Parallel Algorithms	3
CMSC 510	Regularization Methods for Machine Learning	3
CMSC 516	Advanced Natural Language Processing	3
CMSC 525	Introduction to Software Analysis, Testing and Verification	3
CMSC 591	Topics in Computer Science	3
Total Hours		18

Recommended course sequence/plan of study for students pursuing a thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3

CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Secure approval from undergraduate program director		
Apply to the M.S. program		
Term Hours:		13-14
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3
Term Hours:		15
Spring semester		
CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)		3
Choose the M.S. thesis adviser		
Term Hours:		12
Fifth year		
Fall semester		
CMSC 697	Directed Research	3
M.S. foundational area courses (theory and systems) ¹		6
Term Hours:		9
Spring semester		
CMSC 697	Directed Research	6

M.S. foundational area course (applied) ¹	3
Term Hours:	9

1

See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Recommended course sequence/plan of study for students pursuing a non-thesis master's

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CMSC 312	Introduction to Operating Systems	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Approved natural science elective (BIOL, CHEM or PHYS course that counts toward the major in that science)		3
Select one of the following:		4-5
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
PHYS 207	University Physics I	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Contact undergraduate and graduate program directors		
Term Hours:		13-14
Spring semester		
CMSC 403	Programming Languages	3
CMSC 508	Database Theory	3
MATH upper-level (300 to 400)		3
Select one of the following:		4-5
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 208	University Physics II	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Term Hours:		13-14
Secure approval from the undergraduate program director		
Apply to the M.S. program		
Senior year		
Fall semester		
CMSC 451	Senior Project I	3
MATH upper-level (300 to 400)		3
Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)		3
CMSC 501	Advanced Algorithms	3
CMSC 516	Advanced Natural Language Processing	3
Term Hours:		15

Spring semester

CMSC 440	Data Communication and Networking	3
CMSC 452	Senior Project II	3
CMSC 525	Introduction to Software Analysis, Testing and Verification (counts toward B.S. and M.S.)	3
Fourth graduate course (counts toward B.S. and M.S.)		3
Term Hours:		12

Fifth year

Fall semester		
M.S. foundational area courses (theory, systems and applied)		9
Term Hours:		9
Spring semester		
Graduate didactic course work		9
Term Hours:		9

1

See the Graduate Bulletin for the list of theory, systems and applied foundational area courses.

Computer Science, Certificate in (Post-baccalaureate undergraduate certificate)

The Certificate in Computer Science is available to students who have received bachelor's degrees in other subject areas and wish to pursue the study of computer science. Additionally students must have completed one semester of calculus or discrete mathematics (MATH 200 or MATH 211 or equivalent with a minimum grade of B) and maintained a minimum overall GPA of 3.0 in their bachelor's degree for acceptance into the program. Students who receive the certificate through this program equip themselves for many professional opportunities in the scientific community and with government agencies. The certificate is also designed to allow interested students to prepare for graduate study in computer science.

This program requires a minimum of 30 credits in computer science at the 200 level or higher. Appropriate course work completed before or after receiving the bachelor's degree can be applied to the certification with approval.

Course	Title	Hours
Required courses		
CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 257	Computer Systems	4
CMSC 302	Introduction to Discrete Structures	3
CMSC 311	Computer Organization	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3

Additional courses

The remaining three courses must be at a 300-level or higher in computer science with at least one of these courses at the 400-level (including CMSC 506 or 508). 9

Total Hours 30

The minimum total of credit hours required for this certificate is 30.

For additional specializations, check departmental requirements.

Upon successful completion of all course work in five years or less, with a minimum GPA of 2.5, the student is awarded the computer science certificate. Successful completion of this program does not guarantee admission to the master's degree program in computer science.

Fundamentals of Computing, Certificate in (Baccalaureate certificate)

The Certificate in Fundamentals of Computing will prepare non-computer science students for employment that requires a solid understanding of computing, including data analysis, data visualization and data security. This baccalaureate certificate runs concurrently with a student's major and is not a stand-alone program.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Analyze a problem and create a software solution for the problem
2. Discuss networks and cybersecurity
3. Apply knowledge of data-focused systems to create and use data and able to discuss the analysis of data
4. Apply knowledge of the software engineering process to build and test a website

Admission requirements

All applicants to the certificate are required to meet the admission requirements of VCU and submit a change of major form. The admission requirements outlined below will apply to all students.

- Applicants must have successfully completed 30 credit hours.
- Applicants must have a minimum GPA of 2.5.
- Applicants must have a declared major.

Curriculum requirements

The curriculum will prepare students to integrate digital technology knowledge with other disciplines. Students will have cross-disciplinary skills and experience across two dimensions as well as deep knowledge in their primary field of study with strong ability in digital technology areas such as data analysis, visualization, and cybersecurity. The curriculum focuses on computational problem-solving with an emphasis on interpreting and communicating the increasingly important information collected in the digital world along with the essential cybersecurity knowledge to appropriately secure data.

Degree requirements

Course	Title	Hours
CMSC 210	Computers and Programming	3
CMSC 320	Software Engineering and Web Development	3

CMSC 330	Data Science Skills	3
CMSC 340	Cybersecurity Skills	3
Total Hours		12

The minimum total of credit hours required for this certificate is 12.

Computer science, minor in

The minor in computer science consists of at least 18 credits in computer science, including the following:

Course	Title	Hours
CMSC 255	Introduction to Programming	4
or EGRE 245	Engineering Programming	
CMSC 256	Data Structures and Object Oriented Programming	3-4
or EGRE 347	Applied Object-oriented Programming	
Select nine upper-level credits in computer science		9
Select at least two additional credits in computer science at the 200 level or above. ¹		2
Total Hours		18-19

1

The following courses will not count toward the computer science minor: CMSC 210, CMSC 320, CMSC 330 and CMSC 340.

All courses required for the minor must be completed with a minimum grade of C.

Department of Electrical and Computer Engineering

Erdem Topsakal, Ph.D.

Professor and chair

[electrical-and-computer.egr.vcu.edu \(https://egr.vcu.edu/departments/electrical/\)](https://egr.vcu.edu/departments/electrical/)

The Department of Electrical and Computer Engineering prepares students for highly competitive, national placement in electrical and computer engineering employment and graduate education by providing a thorough grounding in electrical science and design, together with a sound foundation in mathematics, basic sciences and life skills.

The department offers baccalaureate degrees in computer engineering and electrical engineering, in addition to minors in both areas, as well as the option to choose course work appropriate for a pre-medicine or pre-dentistry curriculum. An electrical and computer engineering track is available in the Master of Science in Engineering as well as the Ph.D. in Engineering. The track is designed to prepare students for practice, research and/or teaching of electrical and computer engineering at the advanced level by providing intensive preparation for professional practice in the microelectronics, nanoelectronics, computer engineering, and controls and communications aspects of electrical and computer engineering. At the advanced level, this track prepares individuals to perform original, leading-edge research in the broad areas of microelectronics, nanoelectronics, controls and communications, and computer engineering.

The curricula of the department provide a strong foundation in the fundamentals of the profession, including engineering problem-solving,

breadth in the major facets of the profession and the opportunity to specialize in today's critical areas of computer engineering, communication systems and microelectronics. Graduates will be well prepared for constant technological change and growth through lifelong learning.

- Computer Engineering, Bachelor of Science (B.S.) (p. 117)
- Electrical Engineering, Bachelor of Science (B.S.) (p. 121)
- Computer engineering, minor in (p. 125)
- Electrical engineering, minor in (p. 125)

Computer Engineering, Bachelor of Science (B.S.)

Computer engineers are responsible for developing the powerful computer systems that have become a part of our everyday life. Applications for computer engineering span the spectrum from high-performance, general-purpose computing systems such as desktop workstations used in all facets of business, to small microprocessors embedded in larger systems and functioning as controllers. These latter applications, known as embedded systems, can be found in control systems for trains, aircraft and automobiles; medical equipment; telecommunications systems; and consumer electronics and appliances. This explosive growth of computer systems in use in almost every new appliance or vehicle has resulted in a strong demand for engineers trained in the development of these systems, and all indications are that this trend will continue for the foreseeable future.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. Communicate effectively with a range of audiences
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. Acquire and apply new knowledge as needed, using appropriate learning strategies

Special requirements

Program D grade policy: Students must receive a minimum grade of C in all engineering, computer science, physics, mathematics and all technical electives to graduate.

Degree requirements for Computer Engineering, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 312	Introduction to Operating Systems	3
EGRE 101	Introduction to Engineering	4
EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
EGRE 245	Engineering Programming	4
EGRE 246	Advanced Engineering Programming	3
EGRE 254	Digital Logic Design	4
EGRE 306	Introduction to Microelectronics	4
EGRE 335	Signals and Systems	4
EGRE 337	Statistical Information Processing	3
EGRE 347	Applied Object-oriented Programming	3
EGRE 364	Microcomputer Systems	4
EGRE 365	Digital Systems	4
EGRE 426	Computer Organization and Design	3
EGRE 428	Introduction to Integrated Systems Design	2
EGRE 429	Advanced Digital Systems Design	2
ENGR 402 & ENGR 403	Senior Design Studio (Seminar) and Senior Design Studio (Seminar)	2
• Additional major requirements		
Select one of the following sequences:		4
EGRE 404 & EGRE 405	Senior Design Studio I (Laboratory/Project Time) and Senior Design Studio II (Laboratory/Project Time)	
EGRE 406 & EGRE 407	Senior Design Studio I - VIP (Laboratory/Project Time) and Senior Design Studio II - VIP (Laboratory/Project Time)	
Technical electives (see list and requirements below)		17
Ancillary requirements		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
ECON 205	The Economics of Product Development and Markets (satisfies BOK for social/behavioral sciences and/or AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 211	Mathematical Structures	3
MATH 301	Differential Equations	3

PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
SPCH 321	Speech for Business and the Professions	3
Open electives		
Select any course.		3
Total Hours		130

The minimum number of credit hours required for this degree is 130.

Capstone project (four credits)

The program culminates in the capstone project. In order to prepare for the appropriate focus area of the capstone project, students, with the help of their academic adviser, should plan a course of study beginning in the fall semester of their junior year.

Technical electives (17 credits)

The 17 credit hours in the junior and senior year must be chosen from the approved lists. The following criteria must be met:

- At least eight credit hours must come from the electrical and computer engineering or computer science areas
- At least three credit hours must come from outside the electrical and computer engineering and computer science areas
- Courses not from the approved lists must be approved by the adviser and department chair.
- Courses must be technical courses at the 300 level or above.
- No more than three credit hours may come from independent study courses.
- If a student wants to apply ENGR 497 toward their technical electives, a minimum of four credit hours must be earned.
- A maximum of nine credits of ENGR 410, ENGR 497 and independent study courses may be used toward technical electives.

Note: Some of the listed courses may have prerequisites that do not count as technical electives.

Course	Title	Hours
Approved electives in electrical and computer engineering		
EGMN 315	Process and Systems Dynamics	3
EGMN 416	Mechatronics	3
EGMN 427	Robotics	3
EGRE 303	Electronic Devices	3
EGRE 307	Integrated Circuits	4
EGRE 309	Introduction to Electromagnetic Fields	3
EGRE 310	Electromagnetic Fields and Waves	3
EGRE 334	Introduction to Microfabrication	4
EGRE 336	Introduction to Communication Systems	3
EGRE 435	Microscale and Nanoscale Fabrication	4
EGRE 436	Advanced Microscale and Nanoscale Fabrication	3

EGRE 444	Communication Systems	3
EGRE 454	Automatic Controls	4
EGRE 455	Control Systems Design	3
EGRE 471	Power System Analysis	3
EGRE 521	Advanced Semiconductor Devices	3
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526/CMSC 506	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 532	GPU Computing	3
EGRE 535	Digital Signal Processing	3
EGRE 540	RF Communications and Antennas	3
EGRE 541	Medical Devices	3
EGRE 553	Industrial Automation	3
EGRE 554	Advanced Industrial Automation	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 573	Sustainable and Efficient Power Systems	3
ENGR 410	Review of Internship (completion of internship required)	1
Approved electives in computer science		
CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 404	Compiler Construction	3
CMSC 409	Artificial Intelligence	3
CMSC 411	Computer Graphics	3
CMSC 420	Software Project Management	3
Approved electives outside electrical and computer engineering and computer science		
EGMN 309	Material Science for Engineers	3
EGMN 321	Numerical Methods	3
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 507	Biomedical Electronics and Instrumentation	3
ENGR 497	Vertically Integrated Projects	1,2
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
MATH 351	Applied Abstract Algebra	3
PHYS 307	The Physics of Sound and Music	3
PHYS 320	Modern Physics	3
PHYZ 320	Modern Physics Laboratory	1

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
EGRE 101	Introduction to Engineering	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		15
Spring semester		
EGRE 245	Engineering Programming	4
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		16
Sophomore year		
Fall semester		
EGRE 206	Electric Circuits	4
EGRE 246	Advanced Engineering Programming	3
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		18
Spring semester		
EGRE 207	Electric Circuits II	4
EGRE 254	Digital Logic Design	4
EGRE 335	Signals and Systems	4
MATH 211	Mathematical Structures	3
Term Hours:		15
Junior year		
Fall semester		
EGRE 306	Introduction to Microelectronics	4
EGRE 337	Statistical Information Processing	3
EGRE 347	Applied Object-oriented Programming	3
EGRE 364	Microcomputer Systems	4
EGRE 365	Digital Systems	4
Term Hours:		18
Spring semester		
CMSC 312	Introduction to Operating Systems	3

ECON 205	The Economics of Product Development and Markets (satisfies BOK for social/behavioral sciences and/or AOI for global perspectives)	3
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
Technical electives		6
Term Hours:		15

Senior year**Fall semester**

EGRE 404 or EGRE 406	Senior Design Studio I (Laboratory/Project Time) or Senior Design Studio I - VIP (Laboratory/Project Time)	2
EGRE 426	Computer Organization and Design	3
EGRE 428	Introduction to Integrated Systems Design	2
ENGR 402	Senior Design Studio (Seminar)	1
SPCH 321	Speech for Business and the Professions	3
General education course or open elective (select AOI for global perspectives; if all general education requirements are satisfied, select an open elective.)		3
Technical elective		3
Term Hours:		17

Spring semester

EGRE 405 or EGRE 407	Senior Design Studio II (Laboratory/Project Time) or Senior Design Studio II - VIP (Laboratory/Project Time)	2
EGRE 429	Advanced Digital Systems Design	2
ENGR 403	Senior Design Studio (Seminar)	1
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Technical electives		8
Term Hours:		16
Total Hours:		130

The minimum number of credit hours required for this degree is 130.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Computer Engineering and M.S. in Engineering with a concentration in electrical and computer engineering in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six credit hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 154 credits rather than the 160 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in academia. The M.S. degree provides formal research experience and can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Students in VCU's B.S. in Computer Engineering program can apply to this accelerated program. Minimum qualifications for admittance to the program include the following:

1. Completion of 97 undergraduate credits, including the prerequisite courses for the capstone project and a minimum of 11 courses from the major requirements (p. 117)
2. A minimum overall GPA of 3.0 and a minimum GPA of 3.2 in major course work

Students who are interested in the accelerated program should consult with the graduate director before they have completed 97 undergraduate credits.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring semester of their junior year, but no later than June 15 of that year. A reference letter from a computer engineering faculty member must accompany the application.

Successful applicants will enter the accelerated program in the fall semester of their senior year and start the M.S. program in the next term immediately following the last semester of undergraduate study. The GRE is waived for the admission to the M.S. Additionally, these students must:

1. Fulfill all requirements for the B.S. degree in computer engineering at VCU
2. Maintain a minimum major GPA of 3.2 and minimum overall GPA of 3.0
3. Complete a minimum of six credits of graduate course work in their senior year

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the ECE undergraduate program director and the ECE graduate program director.

Degree requirements

The Bachelor of Science in Computer Engineering degree will be awarded upon completion of a minimum of 130 credits and the satisfactory completion of all undergraduate degree requirements as presented in the Undergraduate Bulletin (p. 117).

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply as required major electives or open elective credits (engineering electives) for the undergraduate degree. These courses are shared credits

with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Examples of graduate engineering courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
EGRE 521	Advanced Semiconductor Devices	3
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 532	GPU Computing	3
EGRE 535	Digital Signal Processing	3
EGRE 540	RF Communications and Antennas	3
EGRE 541	Medical Devices	3
EGRE 553	Industrial Automation	3
EGRE 554	Advanced Industrial Automation	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 573	Sustainable and Efficient Power Systems	3
EGRE 591	Special Topics in Electrical and Computer Engineering	1-4

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the senior year.

Course	Title	Hours
Senior year		
Fall semester		
EGRE 404	Senior Design Studio I (Laboratory/Project Time)	2
or EGRE 406	Senior Design Studio I - VIP (Laboratory/Project Time)	
EGRE 426	Computer Organization and Design	3
EGRE 428	Introduction to Integrated Systems Design	2
ENGR 402	Senior Design Studio (Seminar)	1
EGRE 5XX (from list above)		3
Other required B.S. course work		6
Term Hours:		17
Spring semester		
EGRE 405	Senior Design Studio II (Laboratory/Project Time)	2
or EGRE 407	Senior Design Studio II - VIP (Laboratory/Project Time)	
EGRE 429	Advanced Digital Systems Design	2
ENGR 403	Senior Design Studio (Seminar)	1
EGRE 5XX (from list above)		3
Other required B.S. course work		8
Term Hours:		16
Fifth year		
Fall semester		

EGRE 697	Directed Research in Electrical and Computer Engineering (for thesis-option only)	3
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EGRE technical electives (500-level or above)		6-9
Open elective ¹		3
Term Hours:		12

Spring semester		
EGRE 697	Directed Research in Electrical and Computer Engineering (for thesis-option only)	3
EGRE technical electives (500-level or above)		6
Open elective ¹		3-6
Term Hours:		12

¹

EGRE, ENGR, EGRB, EGMN, CMSC, CLSE, PHYS, MATH, OPER, STAT, CHEM at 500-level or above, approved by the adviser

Electrical Engineering, Bachelor of Science (B.S.)

The profession of electrical engineering touches all aspects of our lives in that electrical engineers design and fabricate devices and systems critical in applications such as computing, communications, health care, manufacturing and automation, power generation and utilization, transportation, and entertainment. An element very important to these and many other applications is the microelectronic device or system.

In the sub-area of microelectronics, electrical engineers design and fabricate electronic materials such as semiconductors, conductors and superconductors used in the manufacture of electronic devices. As a natural progression, electrical engineers design and fabricate electronic devices such as transistors, which control or modulate the flow of energy; sensors of light, mechanical force, chemicals, etc.; electromagnetic radiation sources such as lasers, light emitting diodes and microwave power sources. Following this progression, we find electrical engineers designing and fabricating integrated circuits such as microprocessors and memory elements; flat-panel displays, etc., which are found in applications ranging from supercomputers to watches, clocks and toys. Further in this progression we find electrical engineers designing and fabricating today's and tomorrow's computers.

Computer systems and application-specific integrated circuits are the elements that enable the existence of today's communication systems, such as the Internet, satellite systems, telemedicine, wired and wireless (cellular) telephones, along with standard and high definition television. Additionally, along with sensors, microwave power sources and actuators, they permit our present and future automated manufacturing lines, air and traffic control systems, and automotive safety and traffic control through collision avoidance radar systems, antilocking brake systems, air bag actuators, automatic traffic routing and the "smart highway" of the future.

Electrical engineers play an ever increasing role in the design and building of major facets of today's and tomorrow's health care systems and medical research through the application of microelectronic instrumentation and diagnostic tools such as MRI and CAT scan systems. The field of electrical engineering truly permeates every facet

of our lives and thus provides excellent employment opportunities to the general practitioner or specialist in more than 35 different subspecialties.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. Communicate effectively with a range of audiences
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. Acquire and apply new knowledge as needed, using appropriate learning strategies

Special requirements

Program D grade policy: Students must receive a minimum grade of C in all engineering, computer science, physics, mathematics and all technical electives to graduate.

Degree requirements for Electrical Engineering, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EGRE 101	Introduction to Engineering	4
EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
EGRE 245	Engineering Programming	4
EGRE 246	Advanced Engineering Programming	3
EGRE 254	Digital Logic Design	4
EGRE 303	Electronic Devices	3
EGRE 306	Introduction to Microelectronics	4
EGRE 309	Introduction to Electromagnetic Fields	3
EGRE 310	Electromagnetic Fields and Waves	3
EGRE 335	Signals and Systems	4
EGRE 336	Introduction to Communication Systems	3
EGRE 337	Statistical Information Processing	3
EGRE 364	Microcomputer Systems	4
ENGR 402 & ENGR 403	Senior Design Studio (Seminar) and Senior Design Studio (Seminar)	2

• Additional major requirements		
Select one of the following sequences:		4
EGRE 404 & EGRE 405	Senior Design Studio I (Laboratory/Project Time) and Senior Design Studio II (Laboratory/Project Time)	
EGRE 406 & EGRE 407	Senior Design Studio I - VIP (Laboratory/Project Time) and Senior Design Studio II - VIP (Laboratory/Project Time)	
Technical electives (see list and requirements below)		18
Ancillary requirements		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
ECON 205	The Economics of Product Development and Markets	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
PHYS 207	University Physics I (may also satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
SPCH 321	Speech for Business and the Professions	3
Open electives		
Select any course.		3
Total Hours		130

The minimum number of credit hours required for this degree is 130.

Capstone project (four credits)

The program culminates in the capstone project. In order to prepare for the appropriate focus area of the capstone project, students, with the help of their academic adviser, should plan a course of study beginning in the fall semester of their junior year.

Technical electives (18 credits)

The 18 credit hours in the junior and senior year must be chosen from the approved lists. The following criteria must be met:

- At least 10 credit hours must be from approved electrical engineering electives (with or without lab).
- At least three credit hours must be from approved electives outside electrical engineering.
- Courses not from the approved lists must be approved by the adviser and department chair.

- Courses must be technical courses at the 300-level or above.
- No more than three credit hours may come from independent study courses.
- If a student wants to apply ENGR 497 toward their technical electives, a minimum of four credit hours must be earned.
- A maximum of nine credits of ENGR 410, ENGR 497 and independent study courses may be used toward technical electives.

NOTE: Some of the listed courses may have prerequisites that do not count as technical electives.

Course	Title	Hours
Approved electrical engineering electives with lab		
EGMN 416	Mechatronics	3
EGRE 307	Integrated Circuits	4
EGRE 334	Introduction to Microfabrication	4
EGRE 365	Digital Systems	4
EGRE 426	Computer Organization and Design	3
EGRE 428	Introduction to Integrated Systems Design	2
EGRE 429	Advanced Digital Systems Design	2
EGRE 435	Microscale and Nanoscale Fabrication	4
EGRE 454	Automatic Controls	4
EGRE 535	Digital Signal Processing	3
Approved electrical engineering electives without lab		
EGMN 315	Process and Systems Dynamics	3
EGMN 427	Robotics	3
EGRE 347	Applied Object-oriented Programming	3
EGRE 436	Advanced Microscale and Nanoscale Fabrication	3
EGRE 444	Communication Systems	3
EGRE 455	Control Systems Design	3
EGRE 471	Power System Analysis	3
EGRE 521	Advanced Semiconductor Devices	3
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526/CMSC 506	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 532	GPU Computing	3
EGRE 540	RF Communications and Antennas	3
EGRE 541	Medical Devices	3
EGRE 553	Industrial Automation	3
EGRE 554	Advanced Industrial Automation	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 573	Sustainable and Efficient Power Systems	3
ENGR 410	Review of Internship (Completion of internship required)	1
Approved electives outside electrical engineering		
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 420	Software Project Management	3
EGMN 309	Material Science for Engineers	3

EGMN 321	Numerical Methods	3
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 507	Biomedical Electronics and Instrumentation	3
ENGR 497	Vertically Integrated Projects	1,2
MATH 310	Linear Algebra	3
MATH 351	Applied Abstract Algebra	3
PHYS 307	The Physics of Sound and Music	3
PHYS 320	Modern Physics	3
PHYZ 320	Modern Physics Laboratory	1

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
EGRE 101	Introduction to Engineering	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Term Hours: 15

Spring semester		Hours
EGRE 245	Engineering Programming	4
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		

Term Hours: 16

Sophomore year

Fall semester		Hours
EGRE 206	Electric Circuits	4
EGRE 246	Advanced Engineering Programming	3
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 18

Spring semester		Hours
EGRE 207	Electric Circuits II	4

EGRE 254	Digital Logic Design	4
EGRE 335	Signals and Systems	4
MATH 307	Multivariate Calculus	4
Term Hours:		16
Junior year		
Fall semester		
EGRE 306	Introduction to Microelectronics	4
EGRE 309	Introduction to Electromagnetic Fields	3
EGRE 337	Statistical Information Processing	3
EGRE 364	Microcomputer Systems	4
PHIL 201	Introduction to Ethics (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
Term Hours:		17
Spring semester		
ECON 205	The Economics of Product Development and Markets	3
EGRE 303	Electronic Devices	3
EGRE 310	Electromagnetic Fields and Waves	3
EGRE 336	Introduction to Communication Systems	3
Technical elective		4
Term Hours:		16
Senior year		
Fall semester		
EGRE 404	Senior Design Studio I (Laboratory/Project or Time)	2
EGRE 406	or Senior Design Studio I - VIP (Laboratory/Project Time)	
ENGR 402	Senior Design Studio (Seminar)	1
SPCH 321	Speech for Business and the Professions	3
General education course (select AOI for global perspectives)		3
Technical electives		7
Term Hours:		16
Spring semester		
EGRE 405	Senior Design Studio II (Laboratory/Project or Time)	2
EGRE 407	or Senior Design Studio II - VIP (Laboratory/Project Time)	
ENGR 403	Senior Design Studio (Seminar)	1
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open elective		3
Technical electives		7
Term Hours:		16
Total Hours:		130

The minimum number of credit hours required for this degree is 130.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Electrical Engineering and M.S. in Engineering with a concentration in electrical and computer engineering in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count

up to six credit hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 154 credits rather than the 160 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in academia. The M.S. degree provides formal research experience and can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Students in VCU's B.S. in Electrical Engineering program can apply to this accelerated program. Minimum qualifications for admittance to the program include the following:

1. Completion of 98 undergraduate credits, including the prerequisite courses for the capstone project and a minimum of **12 courses from the major requirements**
2. A minimum overall GPA of 3.0 and a minimum GPA of 3.2 in major course work.

Students who are interested in the accelerated program should consult with the graduate director before they have completed 98 undergraduate credits.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring semester of their junior year, but no later than June 15 of that year. A reference letter from an electrical engineering faculty member must accompany the application.

Successful applicants will enter the accelerated program in the fall semester of their senior year and start the M.S. program in the next term immediately following the last semester of undergraduate study. The GRE is waived for the admission to M.S. Additionally, these students must:

1. Fulfill all requirements for the B.S. degree in electrical engineering at VCU
2. Maintain a minimum major GPA of 3.2 and minimum overall GPA of 3.0
3. Complete a minimum of six credits of graduate course work in their senior year

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the ECE undergraduate program director and the ECE graduate program director.

Degree requirements

The Bachelor of Science in Electrical Engineering degree will be awarded upon completion of a minimum of 130 credits and the satisfactory completion of all undergraduate degree requirements as stated in the **Undergraduate Bulletin**.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply as required major electives or open elective credits (engineering electives) for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Examples of graduate engineering courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
EGRE 521	Advanced Semiconductor Devices	3
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 532	GPU Computing	3
EGRE 535	Digital Signal Processing	3
EGRE 540	RF Communications and Antennas	3
EGRE 541	Medical Devices	3
EGRE 553	Industrial Automation	3
EGRE 554	Advanced Industrial Automation	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 573	Sustainable and Efficient Power Systems	3
EGRE 591	Special Topics in Electrical and Computer Engineering	1-4

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the senior year.

Course	Title	Hours
Senior year		
Fall semester		
EGRE 404	Senior Design Studio I (Laboratory/Project Time)	2
or EGRE 406	Senior Design Studio I - VIP (Laboratory/Project Time)	
ENGR 402	Senior Design Studio (Seminar)	1
EGRE 5XX (from list above)		3
Other required B.S. course work		10
Term Hours:		16
Spring semester		
EGRE 405	Senior Design Studio II (Laboratory/Project Time) ()	2
or EGRE 407	Senior Design Studio II - VIP (Laboratory/Project Time)	
ENGR 403	Senior Design Studio (Seminar)	1

EGRE 5XX (from list above)		3
Other required B.S. course work		10
Term Hours:		16

Fifth year

Fall semester

EGRE 697	Directed Research in Electrical and Computer Engineering (for thesis-option only)	3
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EGRE technical elective (500-level or above)		6-9
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Open elective ¹		3
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Term Hours:		12
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Spring semester

EGRE 697	Directed Research in Electrical and Computer Engineering (for thesis-option only)	3
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EGRE technical elective (500-level or above)		6
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Open elective ¹		3-6
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Term Hours:		12
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EGRE, ENGR, EGRB, EGMN, CMSC, CLSE, PHYS, MATH, OPER, STAT, CHEM at 500-level or above and approved by the adviser

Computer engineering, minor in

The minor in computer engineering consists of completing the following courses (21-22 credits):

Course	Title	Hours
Select one of the following:		
		7
CMSC 255 & CMSC 256	Introduction to Programming and Data Structures and Object Oriented Programming	
EGRE 245 & EGRE 246	Engineering Programming and Advanced Engineering Programming	
EGRE 254	Digital Logic Design	4
EGRE 364	Microcomputer Systems	3-4
or CMSC 311	Computer Organization	
EGRE 365	Digital Systems	4
EGRE 426	Computer Organization and Design	3
Total Hours		21-22

All courses required for the minor must be completed with a minimum grade of C.

Electrical engineering, minor in

The minor in electrical engineering consists of completing at least 18 credits in electrical engineering courses (EGRE courses and EGMN 315). The courses must include:

Course	Title	Hours
EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
Select nine upper-level credits in electrical engineering		9

Select at least one additional credit in electrical engineering	1
Total Hours	18

All courses required for the minor must be completed with a minimum grade of C.

Department of Mechanical and Nuclear Engineering

Gary Tepper, Ph.D.
Professor and chair

mechanical-and-nuclear.egr.vcu.edu (<https://egr.vcu.edu/departments/mechanical/>)

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types including automobiles, airplanes, rockets, submarines, power generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more. In addition to well-known areas such as nuclear energy, nuclear propulsion and nuclear medicine, nuclear engineers are involved in many other applications of nuclear science and technology in fields as diverse as agriculture, industry, homeland security, forensics, environmental protection and even art. The Department of Mechanical and Nuclear Engineering provides quality graduate and undergraduate education through the following degree-granting programs:

- B.S. in Mechanical Engineering (general mechanical engineering curriculum)
- B.S. in Mechanical Engineering (nuclear engineering concentration)
- M.S. in Mechanical and Nuclear Engineering (thesis and non-thesis options, as well as online option)
- Ph.D. in Mechanical and Nuclear Engineering

Current areas of research within the department include but are not limited to energy conversion systems, smart materials, corrosion, medical devices, aerosol science, sensors, radiation detection and measurement, nuclear reactor design, robotics, fluid mechanics, nanotechnology, and biomechanics.

- Mechanical Engineering, Bachelor of Science (B.S.) (p. 126)
- Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering (p. 129)
- Mechanical engineering, minor in (p. 132)

Mechanical Engineering, Bachelor of Science (B.S.)

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types, including automobiles, airplanes, rockets, submarines, power generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more.

In addition, mechanical engineers design and analyze the energy sources that provide power to machines, fluids that interact with machines and the materials from which machines are constructed. Mechanical engineers also work in cutting-edge fields such as nanotechnology, alternative energy sources and environmentally friendly "green" manufacturing processes. Another important application of mechanical

engineering is in medicine, where artificial organs, surgical tools and drug-delivery systems are vital to human well-being.

Mechanical engineers are in continuous demand by virtually all industries and are also employed by state and federal governments and enjoy one of the highest starting salaries of all college majors. Mechanical engineering graduates can, if they wish, continue their studies and obtain advanced degrees in fields such as business, law, medicine and engineering.

The VCU Department of Mechanical and Nuclear Engineering is the largest in the College of Engineering and offers an accredited B.S. degree in mechanical engineering, including the option of obtaining a major concentration nuclear engineering.

As part of the B.S. degree in mechanical engineering, all students complete an approved internship or cooperative education experience.

Student learning outcomes

Upon completing this program, students will demonstrate:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Special requirements

Students must earn a minimum grade of C in all required engineering courses; in all courses used to satisfy engineering and professional elective requirements; and in the following:

Course	Title	Hours
MATH 200	Calculus with Analytic Geometry I	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I	5

Students must maintain a minimum major GPA of 2.0.

Degree requirements for Mechanical Engineering, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EGMN 102	Engineering Statics	3
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 204	Thermodynamics	3
EGMN 215	Engineering Visualization and Computation	3
EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 309	Material Science for Engineers	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 312	Thermal Sciences Lab	1.5
EGMN 315	Process and Systems Dynamics	3
EGMN 321	Numerical Methods	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
EGMN 420	CAE Design	3
EGRE 206	Electric Circuits	4
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar)	1
• Additional major requirements		
EGMN 416	Mechatronics	3
EGMN 421	CAE Analysis	3
Approved internship or cooperative education experience		0
ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	
or ENGR 498	Review of Cooperative Education Experience	
• Major electives		
Select engineering electives as described below.		6
Select additional engineering or professional electives as described below.		6
Ancillary requirements		

CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
MGMT 310	Managing People in Organizations	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Open electives		
Select any course.		3
Total Hours		130

The minimum number of credit hours required for this degree is 130.

Engineering and professional electives

Students must complete a combined total of 12 credits of engineering electives and professional electives. No more than six credits of professional electives may apply toward this total.

Engineering electives

Engineering electives are satisfied by completing courses that meet all four of the following criteria:

1. College of Engineering course (CLSE, CMSC, EGMN, EGRB, EGRE, ENGR)
2. Not otherwise required for the major by the effective bulletin
3. 300-level or greater
4. Three or more credit hours, except for ENGR 497

Note: A minimum of four credits of ENGR 497 must be completed to use this course to meet engineering elective requirements.

A minimum of three credits of engineering electives must come from courses other than CMSC 492, EGMN 492, EGRE 492, ENGR 399, ENGR 492 and ENGR 497. A maximum total of six credits of these same courses may be used as engineering electives as long as they are not being used to satisfy another major requirement.

Professional electives

Professional electives are satisfied by completing courses that meet all four of the following criteria:

1. One of the following course rubrics: ACCT, ANAT, BIOC, BIOL, BIOS, BNFO, BUSN, CHEM, ECON, ENVS, FIRE, HSEP, INFO, INNO, INSC, LFSC, MATH, MGMT, MKTG, NANO, OPER, PHIS, PHYS, STAT, SCMA, VNTR

2. Not otherwise required for the major by the effective bulletin
3. 300-level or greater
4. Three or more credit hours

Other courses may be used to satisfy engineering or professional elective requirements with prior written approval from the department chair.

All courses used to satisfy engineering or professional elective requirements must be completed with a minimum grade of C.

Courses taken at other institutions

Students enrolled in degree programs at VCU must receive prior approval to take courses at other institutions to ensure credits earned concurrently at another institution are accepted for transfer at VCU. After enrolling in the VCU undergraduate mechanical engineering program, a student must receive prior approval to complete any course at another institution, and the following policies apply.

1. A student will not be approved to take an EGMN-equivalent course at another institution in a semester when the VCU course is offered. The department chair may approve an exception to this policy in extraordinary circumstances.
2. A total of no more than two EGMN-equivalent courses can be taken at another institution after enrolling in the VCU mechanical engineering program. The department chair may approve additional courses in exceptional circumstances.
3. A student may not transfer an EGMN-equivalent course from another institution for an EGMN course in which the student has a VCU honor code violation. The department chair may approve an exception to this policy in extraordinary circumstances.
4. Courses other than EGMN-equivalent courses (EGRE, MATH, PHYS, etc.) may be approved to be taken outside of VCU if the student receives prior approval for each course using the appropriate VCU form.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
Term Hours:		16

Spring semester

EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 215	Engineering Visualization and Computation	3
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
Term Hours:		16

Sophomore year

Fall semester

EGMN 102	Engineering Statics	3
EGMN 309	Material Science for Engineers	3
ENGR 395	Professional Development	1
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		18

Spring semester

EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGRE 206	Electric Circuits	4
MATH 307	Multivariate Calculus	4
Term Hours:		17

Junior year

Fall semester

EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 321	Numerical Methods	3
EGMN 420	CAE Design	3
STAT 441	Applied Statistics for Engineers and Scientists	3
Term Hours:		16.5

Spring semester

ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
EGMN 303	Thermal Systems Design	3
EGMN 312	Thermal Sciences Lab	1.5
EGMN 421	CAE Analysis	3
EGMN 302	Heat Transfer	3
EGMN 315	Process and Systems Dynamics	3
Term Hours:		16.5

Summer semester

ENGR 396	Internship Experience	0
Term Hours:		0
Senior year		
Fall semester		
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 416	Mechatronics	3
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 496	Internship Review	0
General education course (select AOI for diversities in the human experience; recommended to select a course that also satisfies BOK for humanities/fine arts if not already satisfied)		3
Engineering elective		3
Engineering or professional elective		3
Term Hours:		15
Spring semester		
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar)	1
MGMT 310	Managing People in Organizations	3
Engineering elective		3
Engineering or professional elective		3
General education course or open elective (select general education BOK for humanities/fine arts; if all general education requirements are already satisfied, select a open elective)		3
Term Hours:		15
Total Hours:		130

The minimum number of credit hours required for this degree is 130.

Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types, including automobiles, airplanes, rockets, submarines, power generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more.

In addition, mechanical engineers design and analyze the energy sources that provide power to machines, fluids that interact with machines and the materials from which machines are constructed. Mechanical engineers also work in cutting-edge fields such as nanotechnology, alternative energy sources and environmentally friendly "green" manufacturing processes. Another important application of mechanical engineering is in medicine, where artificial organs, surgical tools and drug-delivery systems are vital to human well-being.

Mechanical engineers are in continuous demand by virtually all industries and are also employed by state and federal governments and enjoy one of the highest starting salaries of all college majors. Mechanical engineering graduates can, if they wish, continue their studies and obtain advanced degrees in fields such as business, law, medicine and engineering.

The VCU Department of Mechanical and Nuclear Engineering is the largest in the College of Engineering and offers an accredited B.S. degree in mechanical engineering, including the option of obtaining a major concentration nuclear engineering. The curriculum for the freshman year is the same with or without the nuclear concentration.

As part of the B.S. degree in mechanical engineering, all students complete an approved internship or cooperative education experience.

Student learning outcomes

Upon completing this program, students will demonstrate:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Special requirements

Students must earn a minimum grade of C in all required engineering courses; in all courses used to satisfy nuclear engineering elective requirements; and in the following:

Course	Title	Hours
MATH 200	Calculus with Analytic Geometry I	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I	5

Students must maintain a minimum major GPA of 2.0.

Degree requirements for Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EGMN 102	Engineering Statics	3

EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 204	Thermodynamics	3
EGMN 215	Engineering Visualization and Computation	3
EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 309	Material Science for Engineers	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 312	Thermal Sciences Lab	1.5
EGMN 315	Process and Systems Dynamics	3
EGMN 321	Numerical Methods	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
EGMN 420	CAE Design	3
EGRE 206	Electric Circuits	4
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar)	1
• Concentration requirements		
EGMN 351	Nuclear Engineering Fundamentals	3
EGMN 352	Nuclear Reactor Theory	3
EGMN 355	Radiation Safety and Shielding	3
EGMN 359	Nuclear Power Plants	3
EGMN 456	Reactor Design and Systems	3
EGMN 530	System Analysis of the Nuclear Fuel Cycle	3

• Additional major requirements

Approved internship or cooperative education experience	0
ENGR 296 Part-time Internship Experience or ENGR 396 Internship Experience or ENGR 398 Cooperative Education Experience	
Review of internship or cooperative education experience	0
ENGR 496 Internship Review or ENGR 498 Review of Cooperative Education Experience	

• Major electives

Select nuclear engineering electives as described below. 6

Ancillary requirements

CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1

MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
MGMT 310	Managing People in Organizations	3
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
Total Hours		130

The minimum number of credit hours required for this degree is 130.

Nuclear engineering electives

Mechanical engineering students completing the nuclear engineering concentration will choose two nuclear engineering elective courses from the following list. A special topic, independent study or other course may be used as a nuclear engineering elective with prior written approval of the department chair.

Course	Title	Hours
EGMN 510	Probabilistic Risk Assessment	3
EGMN 545	Energy Conversion Systems	3
EGMN 550	Energy and Sustainability	3
EGMN 560	Monte Carlo Simulations	3
EGMN 574	Nuclear Safeguards, Security and Nonproliferation	3
EGMN 575	Fast Breeder Reactors	3

All courses used to satisfy nuclear engineering elective requirements must be completed with a minimum grade of C.

Courses taken at other institutions

Students enrolled in degree programs at VCU must receive prior approval to take courses at other institutions to ensure credits earned concurrently at another institution are accepted for transfer at VCU. After enrolling in the VCU undergraduate mechanical engineering program, a student must receive prior approval to complete any course at another institution, and the following policies apply.

1. A student will not be approved to take an EGMN-equivalent course at another institution in a semester when the VCU course is offered. The department chair may approve an exception to this policy in extraordinary circumstances.
2. A total of no more than two EGMN-equivalent courses can be taken at another institution after enrolling in the VCU mechanical engineering program. The department chair may approve additional courses in exceptional circumstances.
3. A student may not transfer an EGMN-equivalent course from another institution for an EGMN course in which the student has a VCU honor code violation. The department chair may approve an exception to this policy in extraordinary circumstances.

4. Courses other than EGMN-equivalent courses (EGRE, MATH, PHYS, etc.) may be approved to be taken outside of VCU if the student receives prior approval for each course using the appropriate VCU form.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Term Hours:		16

Spring semester

EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 215	Engineering Visualization and Computation	3
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		16

Sophomore year

Fall semester		Hours
EGMN 102	Engineering Statics	3
EGMN 351	Nuclear Engineering Fundamentals	3
ENGR 395	Professional Development	1
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		18
Spring semester		Hours
EGMN 201	Dynamics and Kinematics	3

EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGMN 359	Nuclear Power Plants	3
MATH 307	Multivariate Calculus	4
Term Hours:		16

Junior year

Fall semester

EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 321	Numerical Methods	3
EGMN 355	Radiation Safety and Shielding	3
EGMN 420	CAE Design	3
Term Hours:		16.5

Spring semester

EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 312	Thermal Sciences Lab	1.5
EGMN 352	Nuclear Reactor Theory	3
EGRE 206	Electric Circuits	4
Nuclear engineering elective		3
Term Hours:		17.5

Summer semester

ENGR 396	Internship Experience	0
Term Hours:		0

Senior year

Fall semester

ECON 205	The Economics of Product Development and Markets (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
EGMN 309	Material Science for Engineers	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 456	Reactor Design and Systems	3
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 496	Internship Review	0
General education course (select AOI for diversities in the human experience; select a course that also satisfies BOK for humanities/fine arts if not already satisfied by another course)		3
Term Hours:		15

Spring semester

EGMN 315	Process and Systems Dynamics	3
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
EGMN 530	System Analysis of the Nuclear Fuel Cycle	3
ENGR 403	Senior Design Studio (Seminar)	1
MGMT 310	Managing People in Organizations	3
Nuclear engineering elective		3
Term Hours:		15

Total Hours: 130

The minimum number of credit hours required for this degree is 130.

Mechanical engineering, minor in

The minor in mechanical engineering consists of 21 credits and successful completion of the following courses:

Course	Title	Hours
EGMN 102	Engineering Statics	3
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGMN 300 or EGMN 420	Mechanical Systems Design CAE Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302 or EGMN 315	Heat Transfer Process and Systems Dynamics	3
Total Hours		21

A maximum of nine credits of comparable course work may be substituted with approval of the chair of the mechanical engineering department. Within these nine credits, EGRB 203 is an approved substitute for EGMN 102, and EGRB 310 is an approved substitute for EGMN 202.

COLLEGE OF HEALTH PROFESSIONS

The College of Health Professions was established on Jan. 1, 1969, to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to the growing need for allied health manpower. At the outset, the college incorporated existing educational programs for hospital administration, medical technology, physical therapy, and radiologic technology and X-ray technicians.

In the years since its establishment, the college has grown significantly — developing unique, cutting-edge curricula and degree offerings in both traditional and nontraditional formats — to meet the increasing demand for allied health teachers, researchers and practitioners. Considered a leader in distance education, VCU's College of Health Professions offers the only interdisciplinary, Internet-based doctoral program in allied health in the country: the Ph.D. in Health Related Sciences. The college currently incorporates nine departments and offers programs at the baccalaureate, certificate, master's and doctoral levels.

Administration

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Alena C. Hampton, Ph.D.
Associate dean for academic affairs and student success

Angela Duncan, Ph.D.
Associate dean for diversity, equity and inclusion

Daniel Lee, Ph.D.
Associate dean for research and strategic initiatives

Michel Landry, P.T., M.B.A., Ph.D.
Associate dean for global health

Accreditation

The College of Health Professions is an institutional member of the American Society of Allied Health Professions and the Virginia Association of Allied Health Professions. All of its programs are approved or accredited by the appropriate national professional or educational organizations.

Medical laboratory sciences (bachelor's degree)

National Accrediting Agency for Clinical Laboratory Sciences

5600 N. River Road, Suite 720, Rosemont, IL 60018-5519; (847) 939-3597, (773) 714-8880 or (773) 714-8886 (fax); info@naacls.org; naacls.org (<http://naacls.org>). Upon graduation the student is eligible to take the national examination for MLS given by the Board of Certification of the American Society for Clinical Pathology.

Health administration (master's and executive master's degrees)

Commission on Accreditation of Healthcare Management Education

Nuclear medicine technology (bachelor's degree in Clinical Radiation Sciences)

Joint Review Committee on Educational Programs in Nuclear Medicine Technology

Nurse anesthesia (doctorate)

Council on Accreditation of Nurse Anesthesia Educational Programs (COA, 222 South Prospect Avenue, Park Ridge, Illinois, 847-692-7050). The COA is recognized by the U.S. Department of Education and the Council on Higher Education Accreditation to accredit programs of nurse anesthesia. Graduates of the entry-to-practice doctoral program are eligible to take the examination for certification conducted by the National Board of Certification and Recertification for Nurse Anesthetists.

Occupational therapy (master's degree)

Accreditation Council for Occupational Therapy Education

Patient counseling (certificate)

Association for Clinical Pastoral Education

Physical therapy (D.P.T.)

Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association

Radiation therapy technology and radiography (bachelor's degree in Clinical Radiation Sciences)

Joint Review Committee on Education in Radiologic Technology

Rehabilitation counseling (master's degree)

Council for Accreditation of Counseling and Related Educational Programs

Philosophy

The faculty of the college is committed to offering, through the establishment and maintenance of rigorous standards of excellence, educational programs that will prepare students for professional careers in the allied health disciplines. Development of professional attitudes, emotional maturity and ethical behavior of students is a vital component of the educational process. It is essential that students gain a deep respect for the dignity of human beings and the inherent rights of patients and others who receive services. The programs are designed to include not only the development of skills to assure excellence in quality of health care, but also factual knowledge and experiences that will provide the basis for continuing intellectual and professional growth.

Community services of the college and faculty include continuing education, consultative resources and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the college and to encourage interdisciplinary research.

Programs

Both entry- and advanced-level undergraduate, graduate, professional and certificate programs are offered by the College of Health Professions. University and accreditation requirements for the individual programs guide the establishment of general admission prerequisites and course and degree requirements. Regulations and procedures for each program are outlined in these bulletins and are intended to ensure the selection of applicants whose motivation, ability, character and health status qualify them to pursue their program of study successfully.

Programs currently offered by this college and the degrees conferred on their graduates are:

College of Health Professions – Dean's Office

- B.S. in Health Services
- Ph.D. in Health Related Sciences

Department of Gerontology

- Graduate Certificate in Aging Studies
- Master of Science

Department of Health Administration

- Master of Health Administration
- Master of Health Administration and Doctor of Medicine (dual degree offered with the VCU School of Medicine)
- Master of Health Administration and Juris Doctor (dual degree offered with the T. C. Williams School of Law at the University of Richmond)
- Master of Health Administration and Master of Science in Information Systems (dual degree offered with the VCU School of Business)
- Master of Science in Health Administration (Professional M.S.H.A. Program – Online)
- Ph.D. in Health Services Organization and Research

Department of Medical Laboratory Sciences

- Bachelor of Science
- Master of Science

Department of Nurse Anesthesia

- Doctor of Nurse Anesthesia Practice
 - Entry-to-practice
 - Post-professional

Department of Occupational Therapy

- Occupational Therapy Doctorate

Department of Patient Counseling

- Post-baccalaureate graduate Certificate in Patient Counseling
- Master of Science

- Master of Science and Master of Divinity (dual degree offered with the School of Theology at Virginia Union University)

Department of Physical Therapy

- Doctor of Physical Therapy
- Ph.D. in Rehabilitation and Movement Science

Department of Radiation Sciences

- Bachelor of Science

Department of Rehabilitation Counseling

- Master of Science in Rehabilitation and Mental Health Counseling
- Post-master's Certificate in Professional Counseling

Licensure/certification

Graduates of most of the programs offered in the College of Health Professions are required or eligible to take national and/or state certification or licensure examinations. Requirements of licensing and certifying agencies vary. Some licensure and certification agencies consider individuals convicted of a felony ineligible for licensure or certification. For information, prospective students should contact the licensure or certification agency for the specific allied health discipline.

Attendance regulations

The faculty considers attendance at lectures, laboratories and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the beginning of each course, instructors relate to their classes the policy of the department concerning the attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

Student performance and behavior

The goals and objectives of the College of Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of students and practitioners is an undeviating acceptance of a professional attitude and pride that will motivate them to adhere to a code of professional ethics and to develop fully their competencies for practice.

The suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this college. To assure a quality of educational and clinical preparation for its graduates, the following statement is promulgated:

- If, in the judgment of the faculty and administration of the College of Health Professions, a student is not considered suitable for emotional, professional or related reasons, the student's academic status may be appropriately altered.

If any questions arise regarding the standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

Standards of professional behavior

These standards describe behaviors expected from the faculty and students of the College of Health Professions. They are in addition to those standards of behavior and ethical conduct required by the college's departments and professional organizations. They are supplemental to the university statement regarding conduct in the classroom.

- Recognize one's position as a role model of your profession for other members of the health care team
- Carry out academic, clinical and research responsibilities in a conscientious manner, making every effort to exceed expectations and demonstrating a commitment to lifelong learning
- Treat patients, faculty and students with respect, demonstrating sensitivity to diversity regarding ethnicity, culture, age, gender, disability, social and economic status, sexual orientation, etc., without discrimination, bias or harassment
- Maintain patient/client confidentiality
- Respect the privacy of all members of the campus community and avoid promoting gossip and rumor
- Interact with all members of the health care team in a collaborative and supportive fashion, with respect and recognition of the roles played by each individual
- Provide help or seek assistance for any member of the health care team who is recognized as impaired in his/her ability to perform his/her professional obligations
- Be mindful of the limits of one's knowledge and abilities and seek help from others whenever appropriate
- Abide by accepted ethical standards in the scholarship, research and practice of patient/client care
- Abide by the guidelines of the VCU Honor System

Financial aid

Financial aid is available for all students meeting the criteria for financial assistance. For details of the programs available contact the Financial Aid Office, Box 980244, Richmond, VA 23298-0244 or telephone (804) 828-9800.

The college and departments also offer financial awards, honors and scholarships. Details may be found on the college's and individual departments' websites at chp.vcu.edu.

Undergraduate information

Preparatory study for health sciences

University Academic Advising administers programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in clinical laboratory sciences (<http://bulletin.vcu.edu/undergraduate/undergraduate-study/academic-advising/prehealth-majors/clinical-laboratory-sciences/>), see the UAA section of this bulletin, which also includes detailed information on the pre-health major in radiation sciences (p. 59).

Health Services, Bachelor of Science (B.S.)

Laurie Cathers, Ph.D., LMSW
Program director

The Bachelor of Science in Health Services will prepare future health care leaders with the knowledge, skills and competencies to meet the challenges of managing responsibilities across the range of health care organizations. With an emphasis on evidence-based practice, the program will prepare students to work as medical and health services providers charged with planning, directing and coordinating medical and health services. Graduates will be able to work in diverse health care settings, such as hospitals, specific clinical areas or departments within those facilities, health management organizations or in medical practice groups.

The program is designed for students who wish to create a pathway into a health care field. It provides a core set of courses to build a foundation of health care knowledge. It also provides the flexibility for students to focus their studies on a particular area of interest through the selection of open and restricted elective courses. The flexibility gives students an opportunity to identify how their strengths, values and skills can best serve the health of their communities.

Student learning outcomes

Upon completion of the B.S. in Health Services degree program, graduates will be able to:

- Describe health, illness and human development in the context of the U.S. health care system
- Analyze contemporary issues and trends in health promotion and delivery in the context of the U.S. health care system
- Demonstrate a basic understanding of professional and ethical behaviors within the health care context
- Identify and analyze cultural and economic factors impacting health disparities in the U.S. health care system
- Apply effective written and oral communications skills within the health care services context
- Analyze and apply basic theories of leadership and change management to the health care services workplace
- Evaluate and interpret evidence-based practices in the health care services context

Degree requirements

The B.S. in Health Services requires 120 credits.

Service-learning requirement

All students in the degree program will have a culminating experiential learning opportunity in the final semester of the senior year when they take ALHP 435. All students will receive constructive feedback from their faculty adviser and also the site supervisor for the relevant experiential and applied learning experience. The course is designed to prepare students for career search, future professional and educational opportunities, and reflective oral and written presentations on professional and ethical practice in the service-learning environment.

Curriculum requirements

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ALHP 310	Introduction to Health Care Professions	3

ALHP 320	Person-centered Care	3
ALHP 325	Introduction to Rehabilitation Services	3
ALHP 330	Human Growth and Development for the Health Professions	3
ALHP 340	Health Care Technology and Innovation	3
ALHP 410	Professional and Clinical Ethics	3
ALHP 415	Health Care Financing and Budgeting	3
ALHP 416	Health Care Economics	3
ALHP 420	Health Care Leadership Development	3
ALHP 425	Health Care Management and Performance	3
ALHP 430	Overview of Research in the Health Professions	3
ALHP 435	Health Care Career Development and Planning in Allied Health Professions	3
• Additional major requirements		
ACCT 202	Accounting for Non-business Majors	3
HCMG 300	Health Care Organization and Services	3
Ancillary requirements		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Restricted electives (Select from the list below.)		24
Open electives		
Select any course.		21
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Restricted electives

Course	Title	Hours
BUSN 329	Introduction to Intercultural Communication	3
GRTY 410	Introduction to Gerontology	3
GRTY 510	Aging	3
INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MGMT 331	Human Resource Management	3
PATC 511	The Professional Caregiver	4
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
PSYC 304	Life Span Developmental Psychology	3
RHAB 202	General Substance Abuse Studies	3
RHAB 321	Introduction to Substance Abuse	3
RHAB 502	American Sign Language I	3
SLWK 201	Introduction to Social Work	3
SLWK 230	Communication in the Helping Process	3

SOCY 344	Medical Sociology	3
SOCY 401	Racial and Ethnic Health Disparities	3

Freshman year

Fall semester		Hours
MATH 131	Introduction to Contemporary Mathematics (satisfies quantitative foundation; any serves as prerequisite for STAT 210)	3
or	MATH 141	or Algebra with Applications
or	MATH 151	or Precalculus Mathematics
or	MATH 200	or Calculus with Analytic Geometry I
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course (select AOI for diversities in the human experience)		3
General education course (select BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)		3
Open elective		3
Term Hours:		15

Spring semester

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course (select BOK for natural sciences and AOI for scientific and logic reasoning)		3
General education course (select any AOI)		3
Open electives		6
Term Hours:		15

Sophomore year

Fall semester		Hours
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select any AOI)		3
Open electives		6
Term Hours:		15

Spring semester

ACCT 202	Accounting for Non-business Majors	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Open electives		6
Restricted elective		3
Term Hours:		15

Junior year

Fall semester		Hours
ALHP 310	Introduction to Health Care Professions	3
ALHP 325	Introduction to Rehabilitation Services	3

HCMG 300	Health Care Organization and Services	3
Restricted electives		6
Term Hours:		15
Spring semester		
ALHP 320	Person-centered Care	3
ALHP 330	Human Growth and Development for the Health Professions	3
ALHP 340	Health Care Technology and Innovation	3
ALHP 410	Professional and Clinical Ethics	3
Restricted elective		3
Term Hours:		15
Senior year		
Fall semester		
ALHP 415	Health Care Financing and Budgeting	3
ALHP 425	Health Care Management and Performance	3
ALHP 430	Overview of Research in the Health Professions	3
Restricted electives		6
Term Hours:		15
Spring semester		
ALHP 416	Health Care Economics	3
ALHP 420	Health Care Leadership Development	3
ALHP 435	Health Care Career Development and Planning in Allied Health Professions	3
Restricted electives		6
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Department of Medical Laboratory Sciences

Teresa S. Nadder, Ph.D., MLS(ASCP)^{CM}
Associate professor and chair

cls.chp.vcu.edu (<https://cls.chp.vcu.edu/>)

The Department of Medical Laboratory Sciences supports the philosophy and mission of the university and the College of Health Professions, and provides an environment that nurtures excellence in education, research and service. The programs offered by the department are dedicated to enhancing and promoting medical laboratory science. The department fosters fair and equitable educational experiences for students of all ages and diverse backgrounds. Strong affiliations with clinical educators and the integration of innovative technology in the academic setting facilitate both the education and research goals of the department.

The department provides students with superior studies in medical laboratory science, including both theoretical and applied clinical education, and develops problem-solving expertise, leadership capabilities and communication skills. By providing advanced theoretical and technical education, the graduate program serves to maintain and update the competency of laboratory professionals and to prepare students to assume roles as laboratory supervisors, university educators and researchers. A mature, responsible approach to the acquisition

of knowledge is cultivated in order to establish continuing intellectual growth and an enthusiasm for the profession.

The department meets the growing health care needs of the community by providing highly competent and professional medical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science. And the department promotes continued professional development and personal growth for the faculty and staff to fulfill and balance the individual's abilities and aspirations with the departmental, college and institutional mission and needs. Members of the department conduct themselves in a forthright, ethical manner and practice the highest standard of quality performance.

The objectives of the Department of Medical Laboratory Sciences are:

- To provide an educational program that prepares students to accurately perform and evaluate analytical tests on body fluids, cells and products
- To foster the development of professional conduct, interpersonal communication skills and ethical principles
- To develop and promote strategies for lifelong learning and to encourage continued professional growth through research, continued education and active participation in professional societies

History

Clinical and medical laboratory scientists have been trained on the MCV Campus since 1927. However, the Department (formerly school) of Medical Technology was not formally established until 1952, at which time the curriculum included six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. The school offered a certificate and/or bachelor's degree program; the certificate program was discontinued during the 1961-62 school year.

In 1974 the curriculum was expanded to the current two-plus-two year program in which students complete 60 semester hours of prerequisites followed by two years of professional course work. The graduate program in medical laboratory sciences was started in 1967 to provide advanced education for certified medical technologists/clinical laboratory scientists. In 1985 the program was modified to allow candidates holding a degree in another area of science to obtain graduate education in medical laboratory sciences.

In 1994, the department name was changed to the Department of Clinical Laboratory Sciences. In 2003, an accelerated track was initiated to integrate the undergraduate and graduate programs, which requires completion of two years of prerequisites and three years of full-time professional course work, and leads to the simultaneous awarding of both the bachelor's and master's degrees.

To aggressively address the critical shortage of clinical laboratory scientists and meet the growing staffing needs of rural Virginia, in 2014 the department began its delivery of the Bachelor of Science using facilities at the Southwest Virginia Higher Education Center in Abingdon, Virginia. Students receive their curriculum of study via two-way synchronous distance education and clinical training rotations in southwest Virginia and eastern Tennessee.

In 2020, the department was approved for a name change and became the Department of Medical Laboratory Sciences.

Facilities

The Department of Medical Laboratory Sciences is located at the College of Health Professions building at 900 East Leigh Street on the MCV Campus. Faculty and clerical offices are located in this facility, as well as student classrooms, general teaching laboratory, study areas and a student lounge. Classrooms and a general teaching laboratory are also present at the Southwest Virginia Higher Education Center at One Partnership Circle, Abingdon, Virginia.

- Medical Laboratory Sciences, Bachelor of Science (B.S.) (p. 138)

Medical Laboratory Sciences, Bachelor of Science (B.S.)

Medical laboratory scientists receive training in the following areas: clinical chemistry, the study of chemical reactions that occur in normal and diseased processes; hematology, the study of the cellular elements of the blood and blood-forming tissues and hemostatic mechanism; urine and body fluids analysis, the study of principles and practices of urinalysis, kidney function, and analyses of cerebrospinal fluid and other body fluids; microbiology, the study of microbiological aspects of infectious disease and the isolation and identification of pathogenic bacteria; immunohematology, the application of theory and principles of blood banking, cell typing, compatibility testing and antibody identification; and immunology, the study of the immune system and the serological and molecular techniques used for diagnosing infectious disease. With the rapid advancement of knowledge in the field of laboratory medicine, there is a growing need for highly skilled and knowledgeable clinical laboratory scientists. Employment is found in hospitals; physicians' offices; research facilities; molecular diagnostics, biotechnology and public health laboratories; industrial quality control; veterinary clinics; and sales and service of health care equipment. In addition to the technical arena, opportunities as managers or consultants exist for graduates of this program.

Upon graduation the student is eligible to take the national examination for Medical Laboratory Scientists given by the Board of Certification of the American Society for Clinical Pathology.

Mission statement

The mission of the undergraduate program is to serve the health care needs of the community by providing highly competent and professional medical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science.

Student learning outcomes

1. Demonstrate knowledge

Students will demonstrate knowledge of the basic underlying scientific concepts and proficiency in performing the full range of laboratory tests in the areas of hematology, clinical chemistry, immunohematology (blood banking), microbiology, body fluids, serology/immunology and molecular diagnostics.

2. Environment conducive for student learning

VCU will provide a high quality educational setting for the development of students' professional skills.

3. Success in workplace

The program will provide the community with competent and professional medical laboratory scientists who can function effectively upon entrance into the field.

4. Professional conduct

Students will demonstrate appropriate professional conduct and leadership characteristics to include effective communication skills, ethical conduct and problem-solving abilities.

Academic regulations

The minimum passing grade for all professional courses leading to the Bachelor of Science degree is D. All courses must be completed with a passing grade, with no more than one D, for the student to be eligible for promotion or graduation. Satisfactory completion of the previous semester's course work is a prerequisite to the next semester.

Promotion/graduation is based on recommendations of the faculty. The student is expected to do all of the following:

- Maintain a minimum GPA of 2.0 at VCU
- Maintain a minimum GPA of 2.0 in CLLS course work
- Obtain a passing grade in all CLLS courses, with no more than one course grade of D in CLLS course work
- Complete the clinical education requirements to the satisfaction of the clinical and academic faculty
- Exhibit the attitudes and skills deemed necessary to function as a professional medical laboratory scientist
- Pay all fees

Detailed grading policies including the mechanism for grade appeals are given to each entering student during orientation.

Program admission

See the Department of Medical Laboratory Sciences website for admissions requirements. (<https://cls.chp.vcu.edu/admissions/>)

Special requirements

All students will have fulfilled core and general education requirements and a minimum of 60 transferable semester credits at an accredited college or university including:

- Biology: 12 hours to include general biology; human physiology and anatomy recommended
- Chemistry: 12 hours to include eight hours of general chemistry; remaining four hours can be (in order of preference) quantitative analysis, organic chemistry or qualitative analysis
- English: six to nine hours of composition (VCU: UNIV 111-UNIV 112 and UNIV 200 or their equivalents)
- Mathematics: three hours of college algebra or higher level; additional mathematics or physics recommended
- Humanities/arts: three hours (selected from courses in history, philosophy, political science, religion, foreign languages, literature, art history or art appreciation)
- Social sciences: three hours (selected from courses in anthropology, economics, geography, psychology or sociology)

Applicants should possess the following essential technical abilities and skills for admission consideration:

- Manual dexterity: ability to use hand(s) or prosthetic devices with coordination
- Fine motor: ability to manipulate small objects with fingertips or adaptive devices
- Mobility: ability to maneuver in the laboratory and around instruments and in patient-care settings
- Vision: ability to distinguish red, yellow, blue and green colors; to distinguish clear from cloudy; and to distinguish objects through a microscope
- Hearing: ability to hear with assistive devices (i.e., phone receivers, hearing aid, etc.)
- Speech: ability to verbally communicate in English
- Writing: ability to communicate effectively in written form in English
- Reading: ability to read, understand and follow directions printed in English
- Emotional and physical stability: ability to work accurately and safely under stress, adapt to changing environments and prioritize tasks
- Personal attributes: must demonstrate integrity, responsibility, tolerance and respect

CLLS 438	Research Paper (optional)	0-1
Ancillary requirements		
Additional subjects and credits required for admission ¹		39
Biology: general biology, human physiology and anatomy (12 credits)		
Chemistry: general (8 credits)		
Chemistry: quantitative analysis, organic chemistry or qualitative analysis (4 credits)		
English composition (6-9 credits)		
Mathematics (3 credits)		
Humanities/fine arts: history, philosophy, political science, religion, foreign languages, literature, art history or art appreciation (3 credits)		
Social sciences: anthropology, economics, geography, psychology or sociology (3 credits)		
Electives (to reach credits toward admission)		
Total Hours		125

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 60 credits.

The minimum number of credit hours required for this degree is 125.

The minimum number of credits for admission into the program is 60.

Freshman year		
Fall semester		Hours
Credits taken toward admission to program		15
Term Hours:		15
Spring semester		
Credits taken toward admission to program		15
Term Hours:		15
Sophomore year		
Fall semester		
Credits taken toward admission to program		15
Term Hours:		15
Spring semester		
Credits taken toward admission to program		15
Term Hours:		15
Junior year		
Fall semester		
CLLS 301	Hematology	3.5
CLLS 304	Urine and Body Fluid Analysis	2
CLLS 307	Introduction to Pathogenic Microbiology	3
CLLS 310	Clinical Immunology	4.5
CLLS 311	Clinical Chemistry and Instrumentation I	5
Term Hours:		18
Spring semester		
CLLS 302	Abnormal Hematology	4
CLLS 306	Immunohematology	4.5
CLLS 308	Pathogenic Bacteriology	5
CLLS 312	Clinical Chemistry and Instrumentation II	5
Term Hours:		18.5

Degree requirements for Medical Laboratory Sciences, Bachelor of Science (B.S.)

Course	Title	Hours
General education		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLLS 301	Hematology	3.5
CLLS 302	Abnormal Hematology	4
CLLS 304	Urine and Body Fluid Analysis	2
CLLS 306	Immunohematology	4.5
CLLS 307	Introduction to Pathogenic Microbiology	3
CLLS 308	Pathogenic Bacteriology	5
CLLS 310	Clinical Immunology	4.5
CLLS 311	Clinical Chemistry and Instrumentation I	5
CLLS 312	Clinical Chemistry and Instrumentation II	5
CLLS 337	Clinical Education	1
CLLS 407	Interpretive Immunohematology	2.5
CLLS 408	Advanced Microbiology	2
CLLS 409	Interpretive Hematology	2
CLLS 410	Advanced Clinical Chemistry and Instrumentation	2
CLLS 411	Principles of Education/Management	3
CLLS 412	Senior Seminar	1
CLLS 483	Biochemistry Practicum	3
CLLS 485	Hematology Practicum	3
CLLS 493	Clinical Microbiology Practicum	3
CLLS 494	Miscellaneous Clinical Practicum	3
CLLS 496	Blood Bank Practicum	3
• Major elective		

Summer semester

CLLS 337	Clinical Education	1
Term Hours:		1

Senior year**Fall semester**

CLLS 483	Biochemistry Practicum	3
CLLS 485	Hematology Practicum	3
CLLS 493	Clinical Microbiology Practicum	3
CLLS 494	Miscellaneous Clinical Practicum	3
CLLS 496	Blood Bank Practicum	3
Term Hours:		15

Spring semester

CLLS 407	Interpretive Immunohematology	2.5
CLLS 408	Advanced Microbiology	2
CLLS 409	Interpretive Hematology	2
CLLS 410	Advanced Clinical Chemistry and Instrumentation	2
CLLS 411	Principles of Education/Management	3
CLLS 412	Senior Seminar	1
CLLS 438	Research Paper (elective study)	0-1
Term Hours:		12.5

Total Hours: **125**

The minimum total of credit hours required for this degree is 125.

Department of Radiation Sciences

Jeffrey S. Legg, Ph.D., RT(R)(CT)(QM), FASRT

Associate professor and chair

radsci.chp.vcu.edu (<https://radsci.chp.vcu.edu/>)

The Department of Radiation Sciences is an integral part of the College of Health Professions and shares its values. The department serves as a national leader in the education of students in the radiologic sciences and provides learning opportunities that are innovative and educationally sound. Strong linkages with clinical affiliates and their staffs are vital to the department's success. Faculty and staff work in a cooperative spirit in an environment conducive to inquisitiveness and independent learning to help a diverse student body develop to its fullest potential. The faculty is committed to the concept of lifelong learning and promotes standards of clinical practice that will serve students throughout their professional careers. Faculty members serve as resources for professionals in practice and contribute to an expanded knowledge base in the field of clinical radiation sciences.

The mission of the Department of Radiation Sciences is to enable a diverse student body to develop its fullest potential and to graduate baccalaureate-level radiologic health professionals who demonstrate outstanding technical, communication and critical-thinking skills.

Department of Radiation Sciences' goals

- For entry-level and second modality programs, students will be clinically competent.
 - Students will attain clinical competence.
 - Graduates will demonstrate clinical competence while employed in the radiation sciences.
- Students will communicate effectively.

- Students will demonstrate effective communication during their clinical experience.
 - Students will demonstrate effective communication through the research project.
 - Graduates will demonstrate effective communication while employed in the radiation sciences.
- Students will demonstrate critical-thinking skills.
 - Students will demonstrate critical-thinking skills during their clinical experience.
 - Students will demonstrate critical-thinking skills in developing their research project.
 - Students will model professionalism.
 - Students will demonstrate professionalism during their clinical experience.
 - Graduates will demonstrate professionalism while employed in the radiation sciences.
 - The department will assure program effectiveness.

History

Radiologic technology education began at the Medical College of Virginia in the 1930s with a one-year training program in radiography. This program has undergone a number of changes through the years to evolve into the current baccalaureate educational program.

A concentration in nuclear medicine technology was added in 1984 and in radiation therapy in 1992. Degree-completion programs have been added to provide an opportunity for certified technologists and therapists to complete requirements for the baccalaureate degree.

Facilities

The educational facilities for the Department of Radiation Sciences are located on the third floor of the College of Health Professions building at 900 E. Leigh St., Suite 3000. These facilities include energized laboratories in radiography, nuclear medicine, radiation therapy and diagnostic medical sonography. The radiography laboratory includes a radiographic/fluoroscopic digital imaging system and a mobile unit. The nuclear medicine laboratory offers a gamma camera and working radionuclide hotlab. Radiation therapy offers an immersive virtual 3-D educational system as well as a 3-D treatment planning lab. And last, the diagnostic medical sonography lab features multiple ultrasound machines and imaging phantoms.

During the various phases of the curriculum, students will be assigned to one or more of the following affiliate institutions: VCU Health's MCV and Children's Hospitals and multiple satellite facilities; McGuire VA Medical Center; Spotsylvania Regional Medical Center; Henrico Doctors' Hospitals; and a variety of smaller clinics and facilities.

- Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in:
 - Diagnostic medical sonography (p. 141)
 - Diagnostic medical sonography (second modality) (p. 142)
 - Nuclear medicine technology (p. 144)
 - Nuclear medicine technology (degree completion) (p. 146)
 - Nuclear medicine technology (second modality) (p. 148)
 - Radiation therapy (p. 150)
 - Radiation therapy (degree completion) (p. 152)
 - Radiation therapy (second modality) (p. 153)

- Radiography (p. 155)
- Radiography (degree completion) (p. 157)

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in diagnostic medical sonography

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: diagnostic medical sonography, nuclear medicine technology, radiation therapy and radiography. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of the program are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology concentration also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board. Graduates of the diagnostic medical sonography concentration are also eligible for the certification examination administered by the American Registry for Diagnostic Medical Sonography.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (p. 59) page elsewhere in this Bulletin.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 208	Foundations of Patient Care	4
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4

CLRS 313	Abdominal Sonography II	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 339	Obstetric and Gynecologic Sonography II	3
CLRS 393	Clinical Education I	2
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in diagnostic medical sonography

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
CLRS 300	Introduction to Sonography	2
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4
CLRS 313	Abdominal Sonography II	3
CLRS 325	Sonography Professional Seminar	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 339	Obstetric and Gynecologic Sonography II	3
CLRS 393	Clinical Education I	2
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 401	Pediatric Sonography	2
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3

CLRS 494	Clinical Education V	3
Ancillary requirements		
Additional subjects and credits required for admission ²		29
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Open electives		
Select any course		11
Total Hours		120

¹
Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

²
See program page for pre-health major in clinical radiation sciences for a complete list of prerequisite requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
Courses taken toward admission to program		15
Term Hours:		15
Spring semester		
Courses taken toward admission to program		14
Term Hours:		14
Sophomore year		
Fall semester		
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
General education course (select AOI for global perspectives)		3
Term Hours:		15
Spring semester		
CLRS 204	Pathophysiology I and II	3
CLRS 206	Cross-sectional Anatomy	2
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education (select any AOI)		4
Open elective		2
Term Hours:		14
Summer semester		
CLRS 300	Introduction to Sonography	2
Term Hours:		2
Junior year		
Fall semester		

ALHP 430	Overview of Research in the Health Professions	3
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 311	Abdominal Sonography I	4
CLRS 393	Clinical Education I	2
Open elective		3
Term Hours:		15

Spring semester		
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 313	Abdominal Sonography II	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
Term Hours:		12

Summer semester		
CLRS 325	Sonography Professional Seminar	3
CLRS 339	Obstetric and Gynecologic Sonography II	3
CLRS 395	Clinical Education III	3
Term Hours:		9

Senior year		
Fall semester		
CLRS 401	Pediatric Sonography	2
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
HCMG 300	Health Care Organization and Services	3
Term Hours:		12

Spring semester		
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Open electives		6
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in diagnostic medical sonography (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or diagnostic medical sonography. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Prerequisites

Course	Title	Hours
ARRT certification (or eligibility) in radiography or NMTCB certification (or eligibility) in nuclear medicine ¹		
English composition		3
Humanities		3
Natural/physical science		3
Social science		3

¹

Must be certified within two semesters of enrollment

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 393	Clinical Education I	2
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in diagnostic medical sonography (second modality)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4
CLRS 325	Sonography Professional Seminar	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 393	Clinical Education I ²	2
CLRS 394	Clinical Education II ²	2
CLRS 395	Clinical Education III ²	3
CLRS 401	Pediatric Sonography	2
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV ²	3
CLRS 494	Clinical Education V ²	3
Ancillary requirements		
ARRT certification (credits applied toward degree)		50
Additional subjects and credits required for admission ³		12
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Open electives		
Select any course		5
Total Hours		120

¹

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

²

These courses have variable credits. The credits indicated are the most commonly used in the curriculum.

3

See special requirements section for details of prerequisite courses.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Minimum credits from ARRT certification and courses from accredited college or university for admission: 62

Junior year

Fall semester		Hours
ALHP 430	Overview of Research in the Health Professions	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 311	Abdominal Sonography I	4
CLRS 393	Clinical Education I	2
STAT 210	Basic Practice of Statistics	3
Term Hours:		17

Spring semester

CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		12

Summer semester

CLRS 325	Sonography Professional Seminar	3
CLRS 395	Clinical Education III	3
Term Hours:		6

Senior year

Fall semester		Hours
CLRS 401	Pediatric Sonography	2
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
HCMG 300	Health Care Organization and Services	3
Term Hours:		12

Spring semester

CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Open electives		5
Term Hours:		11

Total Hours: 58

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: diagnostic medical sonography, nuclear medicine technology, radiation therapy and radiography. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of the program are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology concentration also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board. Graduates of the diagnostic medical sonography concentration are also eligible for the certification examination administered by the American Registry for Diagnostic Medical Sonography.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Attain clinical competence in entry-level sonographic procedures
- Communicate effectively with patients, staff and physicians in the radiology department
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (p. 59) page elsewhere in this Bulletin.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2

CLRS 319	Nuclear Medicine Procedures III	3	CLRS 322	Nuclear Medicine Physics and Instrumentation II	4
CLRS 321	Nuclear Medicine Physics and Instrumentation I	2	& CLRZ 322	and Nuclear Medicine Physics and Instrumentation Laboratory II	
CLRS 322	Nuclear Medicine Physics and Instrumentation II	3	CLRS 341	Radiation Physics	2
CLRS 341	Radiation Physics	2	CLRS 393	Clinical Education I	2
CLRS 393	Clinical Education I	2-5	CLRS 394	Clinical Education II	2
CLRS 394	Clinical Education II	2-4	CLRS 395	Clinical Education III	3
CLRS 395	Clinical Education III	2-6	CLRS 407	Introduction to PET/CT	2
CLRS 417	Nuclear Medicine Procedures IV	3	CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2	CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 453	Quality Management in Nuclear Medicine	2	CLRS 430	Radiobiology	2
CLRS 461	Radiopharmaceutical: Preparation and Quality Control	2	CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 488	Senior Seminar	3	CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 493	Clinical Education IV	1-5	CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	1-5	CLRS 493	Clinical Education IV	3
CLRZ 321	Nuclear Medicine Physics and Instrumentation Laboratory I	1	CLRS 494	Clinical Education V	3
CLRZ 322	Nuclear Medicine Physics and Instrumentation Laboratory II	1			

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3

Ancillary requirements

Additional subjects and credits required for admission ²		29
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3

Total Hours **120**

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 29 credits.

2

See program page for pre-health major in clinical radiation sciences for a complete list of prerequisite requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
Courses taken toward admission to program	15
Term Hours:	15
Spring semester	Hours
Courses taken toward admission to program	14
Term Hours:	14

Sophomore year**Fall semester**

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1

Term Hours: 16

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CLRS 204	Pathophysiology I and II	3
CLRS 232	Radiation Safety	2
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 15

Summer semester

CLRS 303	Orientation to Nuclear Medicine	2
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Term Hours: 2

Junior year**Fall semester**

ALHP 430	Overview of Research in the Health Professions	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2

Term Hours: 15

Spring semester

CLRS 318	Nuclear Medicine Procedures II	2
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
General education course (select AOI for global perspectives)		3

Term Hours: 12

Summer semester

CLRS 319	Nuclear Medicine Procedures III	3
CLRS 395	Clinical Education III	3

Term Hours: 6

Senior year**Fall semester**

CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2

Term Hours: 13

Spring semester

CLRS 407	Introduction to PET/CT	2
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3

Term Hours: 12

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists, Nuclear Medicine Technology Certification Board and/or American Registry of Diagnostic Medical Sonography. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective written communication
- Demonstrate critical-thinking skills in developing a research project

Special requirements

Prerequisites

NMTCB/ARRT Certification (or eligibility) in nuclear medicine¹

¹

Must be NMTCB/ARRT certified within two semesters of enrollment.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
Ancillary requirements		
NMTCB/ARRT nuclear medicine certification		50
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Electives (300 level or higher)		34
Open electives		
Select any course		16
Total Hours		120

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Sample outline (full-time option)

Credits toward admission for NMTCB/ARRT nuclear medicine certification: 50

Year one

Fall semester	Hours
ALHP 430 Overview of Research in the Health Professions	3
HCMG 300 Health Care Organization and Services	3
STAT 210 Basic Practice of Statistics	3
Natural/physical science elective	3
Social science elective	3
Term Hours:	15
Spring semester	
CLRS 206 Cross-sectional Anatomy	2

CLRS 398	Introduction to Research	1
CLRS 430	Radiobiology	2
Electives		7
Humanities elective		3
Term Hours:		15
Summer semester		
Electives (300-level +)		10
Term Hours:		10
Year two		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 498	Senior Project	2
Electives (300-level +)		12
Term Hours:		16
Spring semester		
CLRS 407	Introduction to PET/CT	2
Electives (300-level +)		12
Term Hours:		14
Total Hours:		70

The minimum number of credit hours required for this degree is 120.

Sample outline (part-time option)

Credits toward admission for NMTCB/ARRT nuclear medicine certification: 50

Year one

Fall semester	Hours
HCMG 300 Health Care Organization and Services	3
Natural/physical sciences elective	3
Term Hours:	6

Spring semester

CLRS 206	Cross-sectional Anatomy	2
STAT 210	Basic Practice of Statistics	3
Social science elective		3
Term Hours:		8

Summer semester

Elective		3
Term Hours:		3

Year two

Fall semester	Hours	
ALHP 430 Overview of Research in the Health Professions	3	
Elective		2
Humanities elective		3
Term Hours:		8
Spring semester		
CLRS 398	Introduction to Research	1
CLRS 430	Radiobiology	2
Elective		2
Term Hours:		5

Summer semester

Electives (300-level +)	4
Term Hours:	4
Year three	
Fall semester	
CLRS 408 Introduction to Computed Tomography (CT)	2
CLRS 498 Senior Project	2
Electives (300-level +)	6
Term Hours:	10
Spring semester	
CLRS 407 Introduction to PET/CT	2
Electives (300-level +)	6
Term Hours:	8
Summer semester	
Electives (300-level +)	6
Term Hours:	6
Year four	
Fall semester	
Electives (300-level +)	6
Term Hours:	6
Spring semester	
Electives (300-level +)	6
Term Hours:	6
Total Hours:	70

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or diagnostic medical sonography. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Attain clinical competence in entry-level sonographic procedures
- Communicate effectively with patients, staff and physicians in the radiology department
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting

- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Prerequisites for Certificate/AAS degree holders

Course	Title	Hours
ARRT certification (or eligibility) in radiography or radiation therapy ¹		
Humanities course		3
English composition course		3
Social science course		3
General chemistry (+ labs)		8

Prerequisites for AS/AA/AA&S/BS degree holders

Course	Title	Hours
ARRT certification in radiography or radiation therapy (or eligibility) ¹		
General chemistry (+ labs)		8
Electives		2

¹

Must be ARRT certified within two semesters of enrollment for eligibility.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321	Nuclear Medicine Physics and Instrumentation I	2
CLRS 322	Nuclear Medicine Physics and Instrumentation II	3
CLRS 393	Clinical Education I	2-5
CLRS 394	Clinical Education II	2-4
CLRS 395	Clinical Education III	2-6
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461	Radiopharmaceutical: Preparation and Quality Control	2
CLRS 461	Radiopharmacy Laboratory	1
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRS 321	Nuclear Medicine Physics and Instrumentation Laboratory I	1

CLRZ 322	Nuclear Medicine Physics and Instrumentation Laboratory II	1
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Must complete statistics or meet requirements for STAT 210 prior to enrollment.

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 393	Clinical Education I ²	2
CLRS 394	Clinical Education II ²	2
CLRS 395	Clinical Education III ²	2
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV ²	3
CLRS 494	Clinical Education V ²	3
Ancillary requirements		
ARRT radiography/radiation therapy certification		50
Additional subjects and credits required for admission ³		10-17
STAT 210	Basic Practice of Statistics	3

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
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Total Hours 120

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

2

These courses have variable credits. The credits indicated are the most commonly used in the curriculum.

3

See special requirements section for details of prerequisite courses.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Minimum credits from ARRT certification and courses from accredited college or university: 60

Junior year		Hours
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 393	Clinical Education I	2
STAT 210	Basic Practice of Statistics	3
Term Hours:		16
Spring semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		14
Summer semester		
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 395	Clinical Education III	2
Term Hours:		5
Senior year		
Fall semester		

CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13
Spring semester		
CLRS 407	Introduction to PET/CT	2
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Term Hours:		12
Total Hours:		60

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: diagnostic medical sonography, nuclear medicine technology, radiation therapy and radiography. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of the program are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology concentration also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board. Graduates of the diagnostic medical sonography concentration are also eligible for the certification examination administered by the American Registry for Diagnostic Medical Sonography.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (p. 59) page elsewhere in this Bulletin.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 208	Foundations of Patient Care	
CLRS 232	Radiation Safety	
CLRS 305	Orientation to Radiation Therapy	
CLRS 309	Oncologic Patient Care	
CLRS 314	Pathology and Treatment Principles I	
CLRS 323	Radiation Therapy, Techniques and Applications	
CLRS 341	Radiation Physics	
CLRS 342	Physics for Radiation Therapy	
CLRS 393	Clinical Education I	
CLRS 394	Clinical Education II	
CLRS 395	Clinical Education III	
CLRS 415	Pathology and Treatment Principles II	
CLRS 430	Radiobiology	
CLRS 455	Quality Management in Radiation Therapy	
CLRS 488	Senior Seminar	
CLRS 493	Clinical Education IV	
CLRS 494	Clinical Education V	

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 305	Orientation to Radiation Therapy	2

CLRS 309	Oncologic Patient Care	2
CLRS 314	Pathology and Treatment Principles I	4
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 341	Radiation Physics	2
CLRS 342	Physics for Radiation Therapy	3
CLRS 393	Clinical Education I ²	2
CLRS 394	Clinical Education II ²	2
CLRS 395	Clinical Education III ²	3
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 415	Pathology and Treatment Principles II	4
CLRS 430	Radiobiology	2
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV ²	3
CLRS 494	Clinical Education V ²	3
Ancillary requirements		
Additional subjects and credits required for admission ³		29
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Open electives		
Select any course.		7
Total Hours		120

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 29 credits.

2

These courses have variable credits. The credits indicated are the most commonly used in the entry-level curriculum.

3

See program page for pre-health major in clinical radiation sciences for a complete list of prerequisite requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
Courses taken toward admission to program	15
Term Hours:	15
Spring semester	
Courses taken toward admission to program	14
Term Hours:	14

Sophomore year

Fall semester

CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
HCMG 300	Health Care Organization and Services	3
Term Hours:		15
Spring semester		
CLRS 204	Pathophysiology I and II	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 232	Radiation Safety	2
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for global perspectives)		3
Open elective		2
Term Hours:		15
Summer semester		
CLRS 305	Orientation to Radiation Therapy	2
Term Hours:		2
Junior year		
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 309	Oncologic Patient Care	2
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2
Open elective		2
Term Hours:		15
Spring semester		
CLRS 314	Pathology and Treatment Principles I	4
CLRS 342	Physics for Radiation Therapy	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
General education (select any AOI)		4
Term Hours:		14
Summer semester		
CLRS 395	Clinical Education III	3
Term Hours:		3
Senior year		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 415	Pathology and Treatment Principles II	4
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13
Spring semester		
CLRS 412	Radiation Therapy Treatment Planning	3

CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Open elective		3
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective verbal communication
- Demonstrate effective written communication
- Demonstrate the ability to problem solve
- Critically analyze published research in the radiation sciences
- Broaden knowledge and awareness of service opportunities in the imaging sciences

Special requirements

Prerequisites

ARRT Certification (or eligibility) in radiation therapy¹

1

Must be ARRT certified within two semesters of enrollment.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 430	Radiobiology	2
Ancillary requirements		
ARRT radiography certification		50
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Electives (300 level or higher)		30
Open electives		
Select any course.		16
Total Hours		120

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Sample outline (full-time option)

Credits toward admission for ARRT radiation therapy certification: 50

Year one		Hours
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Natural/physical science elective		3
Social science elective		3
Term Hours:		18
Spring semester		

CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
Humanities elective		3
Open electives		7
Term Hours:		13
Summer semester		
Electives (300-level +)		6
Term Hours:		6
Year two		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 498	Senior Project	2
Electives (300-level +)		12
Term Hours:		16
Spring semester		
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 430	Radiobiology	2
Electives (300-level +)		12
Term Hours:		17
Total Hours:		70

The minimum number of credit hours required for this degree is 120.

Sample outline (part-time option)

Credits toward admission for ARRT radiation therapy certification: 50

Year one		
Fall semester		
HCMG 300	Health Care Organization and Services	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Natural/physical science elective		3
Term Hours:		9
Spring semester		
STAT 210	Basic Practice of Statistics	3
Social science elective		3
Term Hours:		6
Summer semester		
Open elective		3
Term Hours:		3
Year two		
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
Humanities elective		3
Open elective		2
Term Hours:		8
Spring semester		
CLRS 398	Introduction to Research	1
CLRS 412	Radiation Therapy Treatment Planning	3
Open elective		2
Term Hours:		6
Summer semester		

Electives (300-level +)		3
Term Hours:		3
Year three		
Fall semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 498	Senior Project	2
Electives (300-level +)		3
Term Hours:		7
Spring semester		
CLRS 430	Radiobiology	2
Electives (300-level +)		6
Term Hours:		8
Summer semester		
Electives (300-level +)		6
Term Hours:		6
Year four		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
Electives (300-level +)		6
Term Hours:		8
Spring semester		
Electives (300-level +)		6
Term Hours:		6
Total Hours:		70

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or diagnostic medical sonography. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Prerequisites

Course	Title	Hours
	ARRT certification (or eligibility) in radiography ¹	
	Humanities course	3
	English composition course	3
	Social science course	3
	Natural/physical science course	3

1

Must be ARRT certified in radiography within two semesters of enrollment.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 305	Orientation to Radiation Therapy	
CLRS 309	Oncologic Patient Care	
CLRS 314	Pathology and Treatment Principles I	
CLRS 323	Radiation Therapy, Techniques and Applications	
CLRS 342	Physics for Radiation Therapy	
CLRS 393	Clinical Education I	
CLRS 394	Clinical Education II	
CLRS 395	Clinical Education III	
CLRS 415	Pathology and Treatment Principles II	
CLRS 430	Radiobiology	
CLRS 455	Quality Management in Radiation Therapy	
CLRS 493	Clinical Education IV	
CLRS 494	Clinical Education V	

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

Course	Title	Hours
	General education (p. 77)	
	Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹	30

Major requirements

• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3

CLRS 305	Orientation to Radiation Therapy	2
CLRS 309	Oncologic Patient Care	2
CLRS 314	Pathology and Treatment Principles I	4
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 342	Physics for Radiation Therapy	3
CLRS 393	Clinical Education I ²	2
CLRS 394	Clinical Education II ²	2
CLRS 395	Clinical Education III ²	3
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 415	Pathology and Treatment Principles II	4
CLRS 430	Radiobiology	2
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV ²	3
CLRS 494	Clinical Education V ²	3

Ancillary requirements

	ARRT radiation therapy certification (credits applied toward degree)	50
	Additional subjects and credits required for admission ³	12
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Total Hours **120**

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

2

These courses have variable credits. The credits indicated are the most commonly used in the curriculum.

3

See special requirements section for details of prerequisite courses.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Minimum credits from ARRT certification and courses from accredited college or university: 62

Junior year

Fall semester		Hours
ALHP 430	Overview of Research in the Health Professions	3
CLRS 305	Orientation to Radiation Therapy	2
CLRS 309	Oncologic Patient Care	2

CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 393	Clinical Education I	2
STAT 210	Basic Practice of Statistics	3
Term Hours:		16
Spring semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 314	Pathology and Treatment Principles I	4
CLRS 342	Physics for Radiation Therapy	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15
Summer semester		
CLRS 395	Clinical Education III	3
Term Hours:		3
Senior year		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 415	Pathology and Treatment Principles II	4
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13
Spring semester		
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Term Hours:		11
Total Hours:		58

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: diagnostic medical sonography, nuclear medicine technology, radiation therapy and radiography. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of the program are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology concentration also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board. Graduates of the diagnostic medical sonography concentration are also eligible for the certification

examination administered by the American Registry for Diagnostic Medical Sonography.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Attain clinical competence in entry-level sonographic procedures
- Communicate effectively with patients, staff and physicians in the radiology department
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve in a clinical setting
- Critically analyze published research in the radiation sciences
- Demonstrate professional and ethical behavior

Special requirements

Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (p. 59) page elsewhere in this Bulletin.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 201	Radiographic Imaging and Exposure I	3
CLRS 208	Foundations of Patient Care	4
CLRS 211	Radiographic Procedures I	4
CLRS 212	Radiographic Procedures II	2
CLRS 232	Radiation Safety	2
CLRS 294	Introduction to Clinical Education I	0.5
CLRS 295	Introduction to Clinical Education II	1
CLRS 312	Radiographic Procedures III	2
CLRS 320	Radiographic Imaging and Exposure II	3
CLRS 331	Radiographic Imaging Equipment	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2.5
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
CLRZ 201	Radiographic Imaging & Exp I Lab	1

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 201 & CLRS 201	Radiographic Imaging and Exposure I and Radiographic Imaging & Exp I Lab	4
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
CLRS 211	Radiographic Procedures I	4
CLRS 212	Radiographic Procedures II	2
CLRS 232	Radiation Safety	2
CLRS 294	Introduction to Clinical Education I	.5
CLRS 295	Introduction to Clinical Education II	1
CLRS 312	Radiographic Procedures III	2
CLRS 320	Radiographic Imaging and Exposure II	3
CLRS 331	Radiographic Imaging Equipment	3
CLRS 332	Radiographic Pathology	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2.5
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
Ancillary requirements		
Additional subjects and credits required for admission ²		29
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Electives (300 level or higher)		6
Open electives		
Select any course		2
Total Hours		120

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 29 credits.

²

See program page for pre-health major in clinical radiation sciences for a complete list of prerequisite requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
Courses taken toward admission to program		15
Term Hours:		15
Spring semester		
Courses taken toward admission to program		14
Term Hours:		14
Sophomore year		
Fall semester		
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
CLRS 201 & CLRS 201	Radiographic Imaging and Exposure I and Radiographic Imaging & Exp I Lab	4
CLRS 204	Pathophysiology I and II	3
CLRS 211	Radiographic Procedures I	4
CLRS 232	Radiation Safety	2
CLRS 294	Introduction to Clinical Education I	.5
Term Hours:		13.5
Summer semester		
CLRS 212	Radiographic Procedures II	2
CLRS 295	Introduction to Clinical Education II	1
Term Hours:		3
Junior year		
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 312	Radiographic Procedures III	2
CLRS 320	Radiographic Imaging and Exposure II	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2.5
Term Hours:		14.5
Spring semester		
CLRS 331	Radiographic Imaging Equipment	3

CLRS 332	Radiographic Pathology	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
General education (select any AOI)		4
Term Hours:		13
Summer semester		
CLRS 395	Clinical Education III	3
Term Hours:		3
Senior year		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
HCMG 300	Health Care Organization and Services	3
General education course (select AOI for global perspectives)		3
Open elective		2
Term Hours:		15
Spring semester		
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Electives (300 level or higher)		6
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective written communication
- Demonstrate critical-thinking skills in developing a research project

Special requirements

Prerequisites

ARRT Certification (or eligibility) in radiography¹

1

Must be ARRT-certified within two semesters of enrollment.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 332	Radiographic Pathology	3
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
Ancillary requirements		
ARRT radiography certification		50
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Electives (300 level or higher)		30
Open electives		
Select any course.		16
Total Hours		120

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Sample outline (full-time option)

Credits toward admission for ARRT radiography certification: 50

Year one		Hours
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Natural/physical science elective		3
Social science elective		3
Term Hours:		18
Spring semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 332	Radiographic Pathology	3
CLRS 398	Introduction to Research	1
Elective (300-level +)		3
Humanities elective		3
Open elective		3
Term Hours:		15
Summer semester		
Open electives		4
Term Hours:		4
Year two		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 498	Senior Project	2
Electives (300-level +)		12
Term Hours:		16
Spring semester		
CLRS 430	Radiobiology	2
Electives (300-level +)		15
Term Hours:		17
Total Hours:		70

The minimum number of credit hours required for this degree is 120.

Sample outline (part-time option)

Credits toward admission for ARRT radiography certification: 50

Year one		
Fall semester		
HCMG 300	Health Care Organization and Services	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Natural/physical science elective		3
Term Hours:		9
Spring semester		
STAT 210	Basic Practice of Statistics	3
Social science elective		3
Term Hours:		6
Summer semester		
Open elective		3
Term Hours:		3
Year two		
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
Humanities elective		3

Open elective		2
Term Hours:		8
Spring semester		
CLRS 332	Radiographic Pathology	3
CLRS 398	Introduction to Research	1
Open elective		2
Term Hours:		6
Summer semester		
Elective (300-level +)		3
Term Hours:		3
Year three		
Fall semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 498	Senior Project	2
Elective (300-level +)		3
Term Hours:		7
Spring semester		
CLRS 430	Radiobiology	2
Electives (300-level +)		4
Term Hours:		6
Summer semester		
Electives (300-level +)		8
Term Hours:		8
Year four		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
Electives (300-level +)		6
Term Hours:		8
Spring semester		
Electives (300-level +)		6
Term Hours:		6
Total Hours:		70

The minimum number of credit hours required for this degree is 120.

COLLEGE OF HUMANITIES AND SCIENCES

The faculty and staff of the College of Humanities and Sciences are dedicated to excellence in teaching, research and public service. The mission of Virginia Commonwealth University provides the framework for this pursuit of excellence.

Teaching and learning are central to the college, and the college is central to educational and intellectual life at VCU. The college meets the educational needs of a diverse student body, provides general education for all undergraduate students of the university, preparatory programs for the health sciences, engineering and law, and educates future teachers in the liberal arts and sciences. The college offers comprehensive undergraduate, graduate and professional programs of study that link a foundation of understanding and knowledge with skills on which students can build careers, become responsible citizens and continue lifelong learning.

Scholarship, creative work and professional accomplishment are essential to teaching and learning. The college is responsible for advancing understanding and increasing knowledge for its own sake, for the educational benefit of its students, and for the good of the larger community.

In both teaching and research, the College of Humanities and Sciences seriously upholds the responsibilities of being part of a public, metropolitan university. Through service and public teaching, the college meets the challenges and opportunities afforded by VCU's urban environment and by its location in the capital of the commonwealth.

The college achieves national and international recognition through the success of its students, the advancement of the disciplines and professions represented by its programs, and through the individual and collaborative research of its faculty.

Administration

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Sally Hunnicutt, Ph.D.
Professor and area associate dean

Marcus Messner, Ph.D.
Professor and area associate dean

Krista Scott
Associate dean for undergraduate programs

Accreditation

Chemistry (bachelor's degree)

The American Chemical Society

Forensic science (bachelor's and master's degrees)

Forensic Science Education Programs Accreditation Commission

Mass communications (bachelor's degrees in the Richard T. Robertson School of Media and Culture)

Accrediting Council on Education in Journalism and Mass Communications

Psychology (doctoral degrees: clinical, counseling)

American Psychological Association

Undergraduate information

Undergraduate degree programs

The College of Humanities and Sciences offers baccalaureate degrees in the following areas (selected concentrations are indicated):

- African American Studies – B.A.
- Anthropology – B.S.
- Biology – B.S.
- Chemistry – B.S.
- Economics – B.S.
- English – B.A.
- Foreign Language – B.A.
 - dual languages
 - French
 - German
 - Spanish
- Forensic Science – B.S.
- Gender, Sexuality and Women's Studies – B.A.
- Health, Physical Education and Exercise Science – B.S.
- History – B.A.
- International Studies – B.A.
- Mass Communications – B.S.
 - advertising
 - creative
 - strategic
 - journalism
 - broadcast
 - digital
 - media production
 - public relations
- Mathematical Sciences – B.S.
 - applied mathematics
 - biomathematics

- general mathematics
- mathematics
- operations research
- secondary teacher preparation
- statistics
- Philosophy – B.A.
 - ethics and public policy
 - philosophy and law
 - philosophy and science
- Physics – B.S.
- Political Science – B.A.
- Psychology – B.S.
- Religious Studies – B.A.
- Science – B.S.
 - biology
 - chemistry
 - physics
 - professional science
- Sociology – B.S.

Information concerning curricula is given in the individual program descriptions.

Minors and certificate programs

In addition to a major, a student may elect a minor area of study in any program or department offering such a program. The minor can be used to fulfill career needs or serve as a means for the student to study a discipline of secondary interest.

Students interested in pursuing a minor should discuss their intentions with their advisers or the chair of the major department. When the student decides on a minor, a change of major/minor form must be completed in the Office of Records and Registration. When the student files for graduation, the student must complete the minor application along with the graduation application.

Courses for the minor should be chosen from courses approved by departments offering minors in their areas. Generally, students cannot minor in the same area as their major.

A minor designation on the transcript requires a minimum of 18 credit hours and a minimum 2.0 GPA must be achieved in the minor. Prerequisites for courses are stated under course descriptions.

Detailed descriptions of each minor and certificate program appear in this bulletin.

Minors are offered in the following areas:

- African American studies
- African studies
- American studies
- anthropology
- Asian and Chinese studies
- biology
- British studies
- chemistry
- creative writing

- economics
- English
- European studies
- French
- gender, sexuality and women's studies
- German
- history
- international social justice studies
- Italian studies
- Latin American studies
- LGBT+ and queer studies
- mathematics
- media studies
- Middle Eastern and Islamic studies
- nonprofit management and administration
- philosophy
- philosophy of law
- physics
- political science
- professional writing and editing
- psychology
- public management
- religious studies
- Russian studies
- sociology
- Spanish
- statistics
- world cinema

Undergraduate certificates are awarded in the following areas and levels:

- Spanish/English translation and interpretation (baccalaureate certificate)
- statistics (post-baccalaureate undergraduate certificate)

Teacher preparation

Students in the College of Humanities and Sciences can apply to the Extended Teacher Preparation Program sponsored jointly with the School of Education. This program awards both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education. Students who successfully complete this program will be certified to teach in early childhood, middle or secondary education.

Additional information on this five-year program is available at the School of Education's Office of Student Services in Room 3106, Oliver Hall, or by calling (804) 827-2670. A more thorough description of this program is found under the "School of Education" section of this bulletin and in the extended teacher preparation handbook available from the School of Education's Department of Teaching and Learning or the College of Humanities and Sciences dean's office.

Information about VCU students' performances on the state-mandated licensure tests (Praxis I: Reading, Writing and Mathematics and Praxis II: Specialty Area Tests) is available on the School of Education website: [soe.vcu.edu](http://www.soe.vcu.edu) (<http://www.soe.vcu.edu>).

Educational goals

The ultimate goal of a liberal arts education is to help students develop the abilities to think and continue their learning. These skills will aid students as they take their places in a world dominated by change. These abilities also will aid students in their future endeavors as they encounter problems, whether in their personal or professional lives or in their communities. Graduates of the College of Humanities and Sciences are broadly educated, not simply trained, allowing them to function as understanding participants in events rather than as spectators or even victims of those events.

To achieve this goal, the faculty of the College of Humanities and Sciences has identified the following specific requirements.

- Students should write well, organize their ideas, support them and communicate them clearly and effectively.
- Students should reason logically and be able to quantify experiences.
- Students should have knowledge of the fundamental ideas and methods of the natural sciences.
- Students should be able to analyze ethical conflicts.
- Students should have an understanding of literature and the other arts.
- Students should have knowledge of American heritage and those of other cultures, along with an introduction to a foreign language.
- Students should have a basic knowledge of human behavior and social, political and cultural institutions.

Academic advising

All freshmen majoring in areas offered within the College of Humanities and Sciences are advised through University Academic Advising. Please refer to the "Undergraduate study" section of this bulletin for further information on the first-year advising program (p. 57). After attaining sophomore standing, students within the College of Humanities and Sciences receive academic advising from within the department or school of their majors. The advising system for each department and school varies somewhat; however, each student is assigned an adviser according to their program of study. Students are encouraged to take full advantage of the educational and career-planning assistance provided by their assigned advisers. Ultimately, students are responsible for understanding all university and college requirements needed to earn a degree and for seeking out academic advising on a regular basis. The academic advisers provide assistance with interpreting policies, requirements and regulations, maximizing academic success, and enriching the overall undergraduate educational experience.

Graduation requirements

All baccalaureate degree programs in the College of Humanities and Sciences require students to complete a minimum of 120 credits. No more than four of those credits can be physical education/activity courses. See program descriptions for exact number of major credits (30 credit minimum) and elective courses to complete the total required 120 credits. For students majoring in a four-year bachelor's degree program within the College of Humanities and Sciences (including students in the pre-dental, pre-medical, pre-optometry, pre-veterinary and extended teacher preparation program classifications), there are three areas of requirements that must be completed for graduation:

1. University general education requirements (see departmental major sections for any additional ancillary requirements)¹
2. Departmental major requirements

3. Electives to complete the total of a minimum of 120 credits

¹ Each degree program within the College of Humanities and Sciences includes the ancillary requirements listed below. (Note: The fine arts and HUMS 202 requirements are waived if a previous degree or general education certificate has been completed, following the same guidelines for waiving general education requirements that are stated in the transfer policies section of this bulletin; and all three of these requirements are waived if a student is completing a primary degree program in an academic unit outside of the College of Humanities and Sciences.)

- Foreign language (0-8 credits): The study of a foreign language enhances students' appreciation for and knowledge of other cultures. Students who have studied a foreign language have cognitive development, creativity and divergent thinking. Students must complete a foreign language through the 102 level or equivalent through credit, placement testing or other demonstrated proficiency.
- Experiential fine arts (1-3 credits): Students involved in the fine arts gain a greater understanding of the cultural and aesthetic possibilities of the world around them. Students satisfy this requirement by the completion of one course offered by the School of the Arts.
- HUMS 202 (<http://bulletin.vcu.edu/search/?P=HUMS%20202>) (1 credit): An online personal finance course focusing on participatory, application-based exercises designed to arm students with the ability to make educated decisions in relation to future financial choices such as payment of student loans, understanding credit card statements, applying for mortgages, credit rating and planning for retirement.

Department of African American Studies

Mignonne Guy, Ph.D.

Associate professor and chair

afam.vcu.edu (<http://www.afam.vcu.edu>)

The Department of African American Studies at Virginia Commonwealth University provides an educationally rich environment in which students and scholars research, learn and teach about the past and present realities of people of African descent. Employing a wide range of theories, perspectives, methods and tools, departmental faculty explore social, political, economic and cultural realities and connections between the experiences of persons in Africa and throughout the African Diaspora. The department emphasizes experiential learning, offers study abroad opportunities and internships.

- African American Studies, Bachelor of Arts (B.A.) (p. 162)
- African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives (p. 165)
- African American Studies, Bachelor of Arts (B.A.) with a concentration in (p. 167) political, religious and societal perspectives (p. 167)
- African American Studies, Bachelor of Arts (B.A.) with a concentration in (p. 169) social and behavioral perspectives (p. 169)
- African American studies, minor in (p. 171)

African American Studies, Bachelor of Arts (B.A.)

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- 1. Define Black experiences across the African Diaspora.**
The program aims for each major to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.
- 2. Document and measure Black experiences across the African Diaspora.**
The program aims for each major to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implication of such approaches when measuring the experiences of people across Africa and its Diaspora.
- 3. To interpret Black experiences across the African Diaspora.**
The program aims for each major to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.
- 4. To affirm and validate Black experiences across the African Diaspora.**
The program aims for each major to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

Special requirements

Majors in African American Studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses. Students also are required to establish an area of study by taking either a minimum of four courses in a single cooperating department or in one of the following multidisciplinary concentrations: artistic, historical and literary perspectives; political, religious and societal perspectives; or social and behavioral perspectives. At least one of the four courses taken in a single cooperating department must have

an Africana focus, and at least one of the four courses must be an upper-level course.

A cooperating department or program is defined as one that regularly offers at least one course with an Africana focus per year, which includes: Anthropology, Dance, English, Gender, Sexuality and Women's Studies, Geography, History, Mass Communications, Music history, Political Science, Psychology, Religious Studies, Sociology, and Theatre. When non-Africana-focused courses are used to meet the concentration requirement, they must be selected in consultation with the African American studies adviser

Degree requirements for African American Studies, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
AFAM 201	Theories and Foundations of Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods ¹	3
AFAM 493	Internship in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
• Additional major requirements		
Complete four courses in one of the cooperating departments or programs listed below, including at least one Africana-focused course and at least one upper level course.		12
Ancillary requirements		
AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

¹

Any one of GSWs 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Cooperating departments and programs requirement

Complete three courses in one of the cooperating departments or programs listed below, including at least one Africana-focused course and at least one upper level course.

- Anthropology
- Dance
- English
- Gender, Sexuality and Women's Studies
- Geography
- History
- Mass Communications
- Music History
- Political Science
- Psychology
- Religious Studies
- Sociology
- Theatre

Refer to the list below for Africana-focused courses offered by or in conjunction with these cooperating departments.

Africana-focused courses from cooperating departments

Note: Students choosing the cooperating department option must complete three courses in one cooperating department or program, including at least one Africana-focused course (from lists below) and at least one upper-level course.

Course	Title	Hours
Anthropology		
AFAM/ANTH/INTL 200	Introduction to African Societies	3
AFAM/ANTH/INTL 309	Gender and Global Health	3
AFAM/ANTH 416	The Origin and Evolution of the Idea of Race	3
AFAM/ANTH/INTL 420	Women of Africa	3
Or a course approved by an African American studies adviser		
Dance		
AFAM/DANC 121	Tap Technique I	2
AFAM/DANC 122	Tap Technique I	2
AFAM/DANC 126	African-Caribbean Dance I	2
AFAM/DANC 127	African-Caribbean Dance I	2
AFAM/DANC 151	Jazz Dance Technique I	2
AFAM/DANC 152	Jazz Dance Technique I	2
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 291	Topics in Dance	1-4
DANC 413	African American Presence in American Dance, Performance and Social Contexts	3
Or a course approved by an African American studies adviser		
English		
AFAM/ENGL 363/INTL 366	African Literature	3

AFAM/ENGL 365/INTL 367	Caribbean Literature	3
AFAM/ENGL 379	African-American Literature: Beginnings Through the Harlem Renaissance	3
ENGL 355	Black Women Writers	3
ENGL/AFAM 382	African-American Literature: Realism to the Present	3

Or a course approved by an African American studies adviser

Gender, sexuality and women's studies

AFAM/GSWS/SOCY 305	African American Family in Social Context	3
AFAM/ANTH/INTL/GSWS 309	Gender and Global Health	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM 390/HIST 380/GSWS 390	Forced and Coerced Labor in Africa and the Americas	3
GSWS 450	Black Feminist Thought	3

Or a course approved by an African American studies adviser

Geography

AFAM/URSP/INTL 333	Geography of Africa	3
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Or a course approved by an African American studies adviser

History

AFAM/HIST 105	Survey of African History	3
AFAM/HIST 106	Survey of African History	3
AFAM/HIST 361	Americans from Africa	3
AFAM/HIST 362	Americans from Africa	3
AFAM 387/HIST 381	History of West Africa to 1800	3
AFAM 389/HIST 383	History of Southern Africa	3
AFAM 390/HIST 380/GSWS 390	Forced and Coerced Labor in Africa and the Americas	3
AFAM 392/HIST 376	Caribbean History to 1838	3
AFAM 393	Akhenaten to Cleopatra	3
HIST 302	Ancient Egypt	3
HIST 348	The American Civil War and Reconstruction	3
HIST 352	History of the South I	3
HIST 353	History of the South II	3
HIST 356	History of Virginia I	3
HIST 357	History of Virginia II	3
HIST 360	The Long Civil Rights Movement	3
HIST 377	Caribbean History Since 1838	3
HIST 378	Atlantic Slavery	3
HIST 384/AFAM 388	Africa: Social, Cultural and Economic History	3
HIST 410	Studies in African History: ____	3
HIST 411	Studies in the African Diaspora: ____	3
HIST 417	Studies in African American History: ____	3

Or a course approved by an African American studies adviser

Mass communications

MASC 474	Diversity in the Media	3
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Or a course approved by an African American studies adviser

Music and music history

AFAM/MHIS 350/ INTL 370	Studies in the Music of the African Continent and Diaspora	3
APPM 360	Jazz Orchestra ¹	1
APPM 361	Small Jazz Ensemble ¹	1
MHIS 147	Jazz Theory and Aural Skills ²	3
MHIS 291	Topics in Music	1-3
MHIS 311	Jazz Arranging I ²	3
MHIS 312	Jazz Arranging II ²	3
MHIS 324	Jazz History ²	3

Political science

AFAM/POLI 302	Politics of the Civil Rights Movement	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM/POLI 343	Black Political Thought	3
AFAM/POLI 345	African-American Politics	3
AFAM/POLI/INTL 356	Government and Politics of Africa	3
AFAM/POLI/INTL 357	Politics of Southern Africa	3

Or a course approved by an African American studies adviser

Psychology

AFAM/PSYC 322	Personality and Behavior of the African American	3
AFAM 346	Mental Health Across the African Diaspora	3

Or a course approved by an African American studies adviser

Religious studies

AFAM/RELS/INTL 307	Black Religion	3
AFAM/INTL/RELS 451	Religion, Racism and Social Justice	3

Or a course approved by an African American studies adviser

Sociology

AFAM/SOCY 104	Sociology of Racism	3
AFAM/GSWS/SOCY 305	African American Family in Social Context	3
SOCY 401	Racial and Ethnic Health Disparities	3

Or a course approved by an African American studies adviser

Theatre

AFAM/THEA 303	Black Theatre	3
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Or a course approved in conjunction by advisers in Theatre and African American studies

¹

Accessible by audition

²

Restricted to music majors

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
AFAM 111	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		14-17
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Term Hours:		16

Introduction to Africana Studies		
Experimental fine arts		1-3
General education course (select AOI for diversities in the human experience)		3
General education course (select quantitative foundations)		3-4
Term Hours:		14-17
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Term Hours:		16

General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		16
Sophomore year		
Fall semester		
AFAM 201	Theories and Foundations of Africana Studies	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Open electives		6
Term Hours:		15

Spring semester		
AFAM 211	Africana Social and Political Thought	3
Approved cooperating department elective		3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Junior year		
Fall semester		
AFAM 311	African Diaspora Experiences	3

Approved cooperating department elective	3
Open electives	9
Term Hours:	15
Spring semester	
AFAM 399 Interdisciplinary Research Methods ¹	3
Approved cooperating department elective	3
Open electives	9
Term Hours:	15
Senior year	
Fall semester	
AFAM 493 Internship in Africana Studies	3
Approved cooperating department elective	3
Open electives	9
Term Hours:	15
Spring semester	
AFAM 499 Capstone Seminar in Africana Studies	3
Open electives	12
Term Hours:	15
Total Hours:	120-123

1

Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

The minimum number of credit hours required for this degree is 120.

African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Define Black experiences across the African Diaspora.**
We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.
- **Document and measure Black experiences across the African Diaspora.**

We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implications of such approaches when measuring the experiences of people across Africa and its Diaspora.

- **To interpret Black experiences across the African Diaspora.**
We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.
- **To affirm and validate Black experiences across the African Diaspora.**
We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities

Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.

Students also are required to establish an area of study by taking a minimum of four courses in the artistic, historical and literary perspectives concentration. At least one of the four courses must be an upper-level course.

Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
AFAM 201	Theories and Foundations of Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods ¹	3
AFAM 493	Internship in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
• Concentration requirements		
Complete a minimum of 12 credits from the approved electives below; at least one course must be 300-level or higher.		12
Ancillary requirements		

AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

1

Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Artistic, historical and literary perspectives electives

Course	Title	Hours
AFAM/HIST 105	Survey of African History	3
AFAM/ANTH/INTL 200	Introduction to African Societies	3
AFAM 291	Topics in African American Studies	3
AFAM/THEA 303	Black Theatre	3
AFAM 330	Black Sights and Sites: Visual Media and Race	3
AFAM/URSP/INTL 333	Geography of Africa	3
AFAM 338	Ferguson, USA: The Criminalization of Race in Historical Perspective	3
AFAM/ARTH 342	African-American Art	3
AFAM/ARTH 358	African Art and Architecture	3
AFAM/HIST 361	Americans from Africa	3
AFAM/HIST 362	Americans from Africa	3
AFAM/ENGL 363/INTL 366	African Literature	3
AFAM/ENGL 365/INTL 367	Caribbean Literature	3
AFAM/ENGL 379	African-American Literature: Beginnings Through the Harlem Renaissance	3
AFAM 387/HIST 381	History of West Africa to 1800	3
AFAM 389/HIST 383	History of Southern Africa	3
AFAM 390/HIST 380/GSWS 390	Forced and Coerced Labor in Africa and the Americas	3
AFAM 391	Topics in African American Studies	3
AFAM 392/HIST 376	Caribbean History to 1838	3
AFAM/ANTH/INTL 420	Women of Africa	3
AFAM/ARTH 440	Modern and Contemporary Art and Architecture of Africa	3

AFAM 491	Topics in African-American Studies (courses with an artistic, historical or literary focus only)	3
APPM 360	Jazz Orchestra I ¹	1
APPM 361	Small Jazz Ensemble ¹	1
ARTH 454	Studies in African Art	3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 291	Topics in Dance	1-4
DANC 413	African American Presence in American Dance, Performance and Social Contexts	3
ENGL 355	Black Women Writers	3
ENGL/AFAM 382	African-American Literature: Realism to the Present	3
FREN 450	Francophone Literatures and Cultures	1-3
HIST 302	Ancient Egypt	3
HIST 348	The American Civil War and Reconstruction	3
HIST 352	History of the South I	3
HIST 353	History of the South II	3
HIST 356	History of Virginia I	3
HIST 357	History of Virginia II	3
HIST 360	The Long Civil Rights Movement	3
HIST 377	Caribbean History Since 1838	3
HIST 378	Atlantic Slavery	3
HIST 384/AFAM 388	Africa: Social, Cultural and Economic History	3
HIST 410	Studies in African History: ____	3
HIST 411	Studies in the African Diaspora: ____	3
HIST 417	Studies in African American History: ____	3
MHIS 147	Jazz Theory and Aural Skills ²	3
MHIS 291	Topics in Music	1-3
MHIS 311	Jazz Arranging I ²	3
MHIS 312	Jazz Arranging II ²	3
MHIS 324	Jazz History ²	3

Some crosslisted courses may count toward multiple concentration requirements.

1

Accessible by audition

2

Restricted to music majors

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

AFAM 111	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
General education course (select AOI for diversities in the human experience)		3
General education course (select quantitative foundations)		3-4
Term Hours:		14-17

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		16

Sophomore year**Fall semester**

AFAM 201	Theories and Foundations of Africana Studies	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Open electives		6
Term Hours:		15

Spring semester

AFAM 211	Africana Social and Political Thought	3
Approved artistic, historical and literary perspectives elective		3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Junior year**Fall semester**

AFAM 311	African Diaspora Experiences	3
Approved artistic, historical and literary perspectives elective		3
Open electives		9
Term Hours:		15

Spring semester

AFAM 399	Interdisciplinary Research Methods ¹	3
Approved artistic, historical and literary perspectives elective		3
Open electives		9
Term Hours:		15

Senior year**Fall semester**

AFAM 493	Internship in Africana Studies	3
Approved artistic, historical and literary perspectives elective		3
Open electives		9
Term Hours:		15

Spring semester

AFAM 499	Capstone Seminar in Africana Studies	3
Open electives		12
Term Hours:		15
Total Hours:		120-123

1

Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

The minimum number of credit hours required for this degree is 120.

African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Define Black experiences across the African Diaspora.**
We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins

and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.

- Document and measure Black experiences across the African Diaspora.**
 We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implications of such approaches when measuring the experiences of people across Africa and its Diaspora.
- To interpret Black experiences across the African Diaspora.**
 We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.
- To affirm and validate Black experiences across the African Diaspora.**
 We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.

Students also are required to establish an area of study by taking a minimum of four courses in the political, religious and societal perspectives concentration. At least one of the four courses must be an upper-level course.

Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

Major core requirements		
AFAM 201	Theories and Foundations of Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods	3
AFAM 493	Internship in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3

• Concentration requirements

Complete a minimum of 12 credits from the approved electives below; at least one course must be 300-level or higher.	12
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Ancillary requirements

AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6

Open electives

Select any course.	50-58
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Total Hours	120
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¹

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Political, religious and societal perspectives requirement

Course	Title	Hours
AFAM 291	Topics in African American Studies (with a political, religious or societal focus)	3
AFAM/POLI 302	Politics of the Civil Rights Movement	3
AFAM/RELS/INTL 307	Black Religion	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM/POLI 343	Black Political Thought	3
AFAM/POLI 345	African-American Politics	3
AFAM/POLI/INTL 356	Government and Politics of Africa	3
AFAM/POLI/INTL 357	Politics of Southern Africa	3
AFAM 391	Topics in African American Studies (with a political, religious or societal focus)	3
AFAM 491	Topics in African-American Studies (with a political, religious or societal focus)	3
ECON/INTL 315	Economic Development	3

Some crosslisted courses may count toward multiple concentration requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

AFAM 111	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives) ¹	3	Hours
UNIV 101	Introduction to the University	1	
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3	
Experiential fine arts		1-3	
General education course (select AOI for diversities in the human experience)		3	
General education course (select quantitative foundations)		3-4	
Term Hours:		14-17	

Spring semester

HUMS 202	Choices in a Consumer Society	1	Hours
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3	
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3	
General education course (select AOI for scientific and logical reasoning)		3	
General education course (select BOK to complete breadth of knowledge requirement)		3	
Open elective		3	
Term Hours:		16	

Sophomore year**Fall semester**

AFAM 201	Theories and Foundations of Africana Studies	3	Hours
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3	
Foreign language 101		3	
Open electives		6	
Term Hours:		15	

Spring semester

AFAM 211	Africana Social and Political Thought	3	Hours
Approved political, religious and societal perspectives elective		3	
Foreign language 102		3	
General education course (select BOK to complete breadth of knowledge requirement)		3	
Open elective		3	
Term Hours:		15	

Junior year**Fall semester**

AFAM 311	African Diaspora Experiences	3	Hours
Approved political, religious and societal perspectives elective		3	
Open electives		9	
Term Hours:		15	

Spring semester

AFAM 399	Interdisciplinary Research Methods	3	Hours
Approved political, religious and societal perspectives elective		3	
Open electives		9	
Term Hours:		15	

Senior year**Fall semester**

AFAM 493	Internship in Africana Studies	3	Hours
Approved political, religious and societal perspectives elective		3	
Open electives		9	
Term Hours:		15	

Spring semester

AFAM 499	Capstone Seminar in Africana Studies	3	Hours
Open electives		12	
Term Hours:		15	
Total Hours:		120-123	

The minimum number of credit hours required for this degree is 120.

African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Define Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.

2. Document and measure Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implication of such approaches when measuring the experiences of people across Africa and its Diaspora.

3. To interpret Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.

4. To affirm and validate Black experiences across the African Diaspora.

We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.

Students also are required to establish an area of study by taking a minimum of four courses in the social and behavioral perspectives concentration. At least one of the four courses must be an upper-level course.

Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
AFAM 201	Theories and Foundations of Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods ¹	3
AFAM 493	Internship in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
• Concentration requirements		
Complete a minimum of 12 credits from the approved electives below; at least one course must be 300-level or higher.		12

Ancillary requirements

AFAM 111 Play course video for Introduction to Africana Studies	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

¹

Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Social and behavioral perspectives electives

Course	Title	Hours
Social and behavioral perspectives electives		
AFAM 291	Topics in African American Studies (with a social or behavioral focus)	3
AFAM/GSWS/SOCY 305	African American Family in Social Context	3
AFAM/ANTH/INTL/ GSWS 309	Gender and Global Health	3
AFAM 310	Black Health Matters: Social Determinants of Health in the African American Community	3
AFAM/PSYC 322	Personality and Behavior of the African American	3
AFAM 346	Mental Health Across the African Diaspora	3
AFAM 347	African American Children and Families	3
AFAM 391	Topics in African American Studies (with a social or behavioral focus)	3
AFAM 491	Topics in African-American Studies (with a social or behavioral focus)	3
GSWS 450	Black Feminist Thought	3
SOCY 401	Racial and Ethnic Health Disparities	3

Some crosslisted courses may count toward multiple concentration requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
AFAM 111	Introduction to Africana Studies (satisfies general education BOK for humanities/fine arts and/or AOI for global perspectives) ¹	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
General education course (select AOI for diversities in the human experience)		3
General education course (select quantitative foundations)		3-4
Term Hours:		14-17

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		16

Sophomore year

Fall semester		Hours
AFAM 201	Theories and Foundations of Africana Studies	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Open electives		6
Term Hours:		15
Spring semester		Hours
AFAM 211	Africana Social and Political Thought	3
Approved social and behavioral perspectives elective		3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Junior year

Fall semester		Hours
AFAM 311	African Diaspora Experiences	3

Approved social and behavioral perspectives elective	3	
Open electives	9	
Term Hours:		15

Spring semester

AFAM 399	Interdisciplinary Research Methods ¹	3
Approved social and behavioral perspectives elective		3
Open electives		9
Term Hours:		15

Senior year

Fall semester		Hours
AFAM 493	Internship in Africana Studies	3
Approved social and behavioral perspectives elective		3
Open electives		9
Term Hours:		15

Spring semester

AFAM 499	Capstone Seminar in Africana Studies	3
Open electives		12
Term Hours:		15
Total Hours:		120-123

1

Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

The minimum number of credit hours required for this degree is 120.

African American studies, minor in

The minor in African American studies requires a minimum of 18 credits. Students must complete the following:

Course	Title	Hours
AFAM 111	Play course video for Introduction to Africana Studies	3
AFAM 201	Theories and Foundations of Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
	Select one course at the 300-level or above from two of the following concentration areas: ¹	6
	Artistic, historical and literary perspectives	
	Political, religious, and societal perspective	
	Social and behavioral perspectives	

1

Refer to list of courses in the respective concentrations.

Courses in African American studies are designed to help students gain a knowledge and appreciation of the history and culture of the Africana world and its contributions to world civilizations.

Department of Biology

Derek Johnson, Ph.D.

Associate professor and chair

Fernando Tenjo, Ph.D.

Associate professor and associate chair

Maria Rivera, Ph.D.

Associate professor and director of graduate studies

biology.vcu.edu (<http://biology.vcu.edu/>)

The Department of Biology offers programs leading to baccalaureate, master's and doctoral degrees; the doctoral degree is offered through the Ph.D. in Integrative Life Sciences program. Students may specialize within many areas, such as molecular and cellular biology, genetics, aquatic and terrestrial ecology, systematics, physiology, neurobiology, and developmental biology. Students also may develop an interdisciplinary focus to their degree program, for example within areas such as bioinformatics, cancer biology, forensic science and environmental science.

In addition to the courses offered by the Department of Biology, graduate students may enroll in graduate courses offered through VCU Life Sciences and these departments in the VCU School of Medicine: Anatomy and Neurobiology, Biochemistry and Molecular Biology, Biostatistics, Human and Molecular Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, and Physiology and Biophysics. Visit the Department of Biology's website (<http://biology.vcu.edu/>) for additional information.

- Biology, Bachelor of Science (B.S.) (p. 172)
- Biology, minor in (p. 175)

Biology, Bachelor of Science (B.S.)

The four-year curriculum in biology prepares students for graduate study in biology, for employment in laboratory or field programs in private industry or government agencies and for teaching in secondary schools. This curriculum also prepares students for admission into schools of medicine, dentistry and veterinary medicine, and into allied health programs.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

Knowledge base

Students will demonstrate knowledge of evolutionary processes and the functions and interactions of cells, organisms and species.

Communication skills

Students will demonstrate oral and written communication skills needed for professional careers in the field of biology.

Critical-thinking skills

Students will demonstrate critical thinking, problem-solving and analytical skills.

Method and inquiry

Students will demonstrate knowledge in the methods of inquiry and research in biology.

Transfer students

Transfer students intending to major in biology must satisfy all biology major course requirements and complete a minimum of 15 credits of VCU biology courses at the 300-, 400- or 500-level.

Extended Teacher Preparation Program

Biology majors interested in teaching careers in secondary education can enroll in the Extended Teacher Preparation Program, which simultaneously awards a bachelor's degree in biology and a master's degree in teaching. For more information about this program, jointly administered by the College of Humanities and Sciences and the School of Education, contact the School of Educations Student Services Center.

Honors in biology

Biology majors may graduate with honors in biology. To qualify, students must have overall and biology GPAs of at least 3.5 and must complete the following courses in this sequence: BIOL 392, at least four credits of BIOL 495 and BIOL 490. Grades of A or B must be earned in each of the listed courses. Students who qualify will have the notation "Honors in Biology" placed on their transcript. Students must meet all Department of Biology requirements for graduation. Students should consult with their academic advisers to create a program suitable to their particular needs and interests.

Special requirements

The curriculum for a Bachelor of Science in Biology requires a minimum of 120 credits, with at least 40 of those credits in biology or other approved courses. A cumulative GPA of 2.0 for biology courses is required. At least five laboratory experiences must be taken from all biology courses, including BIOZ 151 and BIOZ 152; up to two laboratory experiences can be selected from BIOZ 395, BIOL 451, BIOL 453, BIOL 492 or BIOL 495. Topics courses (BIOL 391, BIOZ 391, BIOL 491 and BIOZ 491) may count as laboratory experiences only when approved in advance by the Department of Biology undergraduate academic committee. Registration in BIOZ 395, BIOL 492 or BIOL 495 must be for a minimum of two credit hours to count as one of the **five** required laboratory experiences. A maximum total of six credits for all undergraduate research and internships in biology (BIOZ 395, BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493 and BIOL 495) may be applied to the 40 credits of Biology required for the major. Additional credits from these courses may be applied to upper level and open elective credits toward the degree. A maximum of four combined credits from BIOL 496 and BIOL 499 may be applied to degree requirements. While BIOL 496 may be repeated for credit toward degree requirements when serving as a preceptorship for different courses, it may not be repeated with the same course for credit toward the degree. No more than five credits of the 100-level (or introductory level) biology courses can be applied to the major.

A minimum grade of C in the following courses is required for enrollment in all courses for which they are prerequisites and to successfully complete the B.S. in Biology.

Course	Title	Hours
BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3

BIOZ 152	Introduction to Biological Science Laboratory II	1
BIOL 200	Quantitative Biology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
MATH 200	Calculus with Analytic Geometry I (or STAT 314 or higher numbered statistics course)	4

PHYS 201 or PHYS 207	General Physics I (satisfies general education AOI for scientific and logical reasoning) University Physics I	4-5
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PHYS 202 or PHYS 208	General Physics II University Physics II	4-5
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STAT 210	Basic Practice of Statistics	3
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Electives (upper-level)		3
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Experiential fine arts ³		1-3
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Foreign language through the 102 level (by course or placement)		0-6
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Open electives

Select any course.		7-23
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Total Hours		120
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1

BNFO/LFSC 251 approved course substitute

2

BNFO/LFSC 252 approved course substitute

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Biology electives

Course	Title	Hours
BIOL 291	Topics in Biology	1-4
BIOL 303	Microbiology	3
BIOZ 303	Microbiology Laboratory	2
BIOL 304	Biology Skills ¹	2
BIOL 307	Aquatic Ecology	3
BIOZ 307	Aquatic Ecology Laboratory	1
BIOL 308	Vertebrate Histology ¹	4
BIOL 309	Entomology ¹	4
BIOL 310	Laboratory in Genetics	2
BIOL 312	Invertebrate Zoology	3
BIOZ 312	Invertebrate Zoology Laboratory	1
BIOL 313	Vertebrate Natural History	3
BIOZ 313	Vertebrate Natural History Laboratory	1
BIOL 314	Animal Reproduction	3
BIOZ 317	Ecology Laboratory	2
BIOL 320	Biology of the Seed Plant ¹	4
BIOL 321	Plant Development	3

Degree requirements for Biology, Bachelor of Science (B.S.)

Course	Title	Hours
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General education (p. 77)

Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
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Major requirements

• Major core requirements

BIOL 152	Introduction to Biological Sciences II	3
BIOL 200	Quantitative Biology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3

BIOZ 151	Introduction to Biological Science Laboratory I ¹	1
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BIOZ 152	Introduction to Biological Science Laboratory II ²	1
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• Additional major requirements

Capstone requirement		0-3
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Select one of the following:

BIOL 475 Biology Capstone Seminar. _

BIOL 477 Biology Capstone Experience (to denote department approved capstone course or experience)

BIOZ 476 Molecular Capstone Laboratory

• Major electives

Select from all biology (BIOL and BIOZ) courses applicable to the biology major and biochemistry (CHEM 403) to satisfy the 40 biology credits required for the major. All majors must complete at minimum three additional upper-level biology lab courses. The laboratory experiences may be fulfilled by a separate laboratory section (BIOZ) or by laboratory hours included in a lecture-based (BIOL) course. Not all courses are offered each semester. BIOL courses at the 500 level are available to seniors and graduate students only.		17-20
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Ancillary requirements

BIOL 151	Introduction to Biological Sciences I	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural science and AOI for scientific and logical reasoning)	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5

BIOZ 321	Plant Development Laboratory	2	BIOL 493	Biology Internship	1-3
BIOL 322	Economic Botany	3	BIOL 495	Research and Thesis	1-4
BIOL 324	Medicinal Botany	3	BIOL 496	Biology Preceptorship: ____	2
BIOZ 324	Medicinal Botany Laboratory	1	BIOL 497	Ecological Service Learning	1
BIOL 325	Fungal Biology ¹	3	BIOL 498	Insects and Plants Service-learning	2
BIOL 333	Evolution of the Angiosperms	3	BIOL 499	Biology Lead Preceptorship	2
BIOL 335	Global Change Biology	3	BIOL 502	Microbial Biotechnology	3
BIOL 340	Development and Stem Cells	3	BIOL 503	Fish Biology ¹	4
BIOL 341/ANTH 301	Human Evolution ¹	4	BIOL 507	Aquatic Microbiology	4
BIOL 391	Topics in Biology (as approved)	1-4	BIOL 508	Barrier Island Ecology	3
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4	BIOL 509	Microbial Ecology	3
BIOL 392	Introduction to Research	2	BIOL 510	Conservation Biology	3
BIOL 395	Directed Study	1-2	BIOL 514	Stream Ecology	4
BIOZ 395	Directed Study	1-2	BIOL/HGEN 516	Population Genetics	3
BIOL 401	Applied and Environmental Microbiology	3	BIOL 518	Plant Ecology	4
BIOL 402	Comparative Vertebrate Anatomy ¹	5	BIOL 519	Forest Ecology ¹	4
BIOL/ANTH 403	Primatology ¹	4	BIOL 520	Population Ecology	3
BIOL 411	Physiology	3	BIOL 521	Community Ecology	3
BIOL 413	Parasitology	3	BIOL 522	Evolution and Speciation	3
BIOL 415	Mangrove Avian Field Ecology ¹	4	BIOL 524	Endocrinology	3
BIOL 416	Ornithology	3	BIOL 530/HGEN 501	Introduction to Human Genetics	3
BIOZ 416	Ornithology Laboratory	2	BIOL 535	Wetlands Ecology ¹	4
BIOL 417	Mammalogy ¹	4	BIOL/BNFO 540	Fundamentals of Molecular Genetics	3
BIOZ 418	Integrative Physiology Laboratory	3	BIOL 541	Laboratory in Molecular Genetics ¹	2
BIOL 420	Yeast and Fermentation ¹	3	BIOL 545/LFSC 510	Biological Complexity	3
BIOL 422	Forest Ecology ¹	4	BIOL 548/LFSC 520	Bioinformatic Technologies	2
BIOL 423	Plant Physiology	3	BIOL 550	Ecological Genetics	3
BIOL 425 Play course video for Field Botany	Field Botany ¹	3	BIOL 560	Conservation Medicine	3
BIOL 430	Invasion Biology	3	BIOL 565	Advances in Cell Signaling	3
BIOL 431	Introduction to Marine Biology	3	BIOL 580	Eukaryotic Biotechnology	3
BIOL 435	Herpetology	3	BIOL 591	Special Topics in Biology	1-4
BIOL/FRSC 438	Forensic Molecular Biology	3	BNFO 301/BIOL 351	Introduction to Bioinformatics	3
BIOZ/FRSZ 438	Forensic Molecular Biology Laboratory	2	CHEM 403	Biochemistry I	3
BIOL 440	Developmental Biology	3	ENVS 330	Environmental Pollution	3
BIOL 445	Neurobiology and Behavior ¹	4	LFSC 301	Integrative Life Sciences Research	3
BIOL 448	Neuroscience	3	MATH/BNFO 380	Introduction to Mathematical Biology	4
BIOL 450	Biology of Cancer I	3			
BIOL 451	Biology of Cancer II ¹	4			
BIOL 453	Cancer Biology Thesis ¹	4			
BIOL 452	Biology of Drugs	3			
BIOL 455	Immunology	3			
BIOL 459	Infectious Disease Ecology	3			
BIOL 460	Human Evolutionary Genetics	3			
BIOL 480	Animal-Plant Interactions	3			
BIOL 489	Communicating Research	1			
BIOL 490	Presenting Research	1			
BIOL 491	Topics in Biology	1-4			
BIOZ 491	Topics in Biology Laboratory	1-4			
BIOL 492	Independent Study	1-4			

¹

This course includes laboratory hours and may be used to satisfy laboratory requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester

Hours

BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education AOl for scientific and logical reasoning)	4

MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Term Hours: 16

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 200	Quantitative Biology	3
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		

Term Hours: 15

Sophomore year

Fall semester

BIOL 300	Cellular and Molecular Biology	3
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Experiential fine arts 1-3

Term Hours: 15-17

Spring semester

BIOL 310	Genetics	3
or BIOL 317	or Ecology or Evolution	
or BIOL 318		
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
MATH 200	Calculus with Analytic Geometry I	4
or STAT 314	or Applications of Statistics	

General education course (select AOI for creativity, innovation and aesthetic inquiry) 3

Term Hours: 15

Junior year

Fall semester

PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and	4-5
or PHYS 207	AOI for scientific and logical reasoning) or University Physics I	

Select the two courses not previously taken from BIOL 310, BIOL 317 and BIOL 318. 6

Foreign language 101 3

General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience) 3

Term Hours: 16-17

Spring semester

PHYS 202	General Physics II	4-5
or PHYS 208	or University Physics II	

Biology elective 3

Biology laboratory elective 1-2

Foreign language 102 3

General education course (select BOK to complete breadth of knowledge requirement and AOI for global perspectives) 3

Term Hours: 14-16

Senior year

Fall semester

Biology electives 5-6

Biology laboratory elective 1-2

Open electives 6

Open elective (upper-level) 3

Term Hours: 15-17

Spring semester

Select one of the following (capstone): 0-3

BIOL 475 Biology Capstone Seminar: ____ -

BIOL 477 Biology Capstone Experience (to denote department approved capstone course or experience) -

BIOZ 476 Molecular Capstone Laboratory -

Biology electives 6

Biology laboratory elective 1-2

Open electives 7

Term Hours: 14-18

Total Hours: 120-131

The minimum number of credit hours required for this degree is 120.

Biology, minor in

The minor in biology requires a minimum of 20 credits in biology, including the following:

Course	Title	Hours
Biology core courses		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Select three courses from the following options:		9
BIOL 200	Quantitative Biology	
BIOL 300	Cellular and Molecular Biology	
BIOL 310	Genetics	
BIOL 317	Ecology	
BIOL 318	Evolution	

Select an additional three credits in biology at the upper level, at least one of which must be a biology laboratory experience. 3

Total Hours 20

Only courses applicable toward the B.S. in Biology can be applied toward the minor in biology. For a list of approved biology electives, see "Biology, Bachelor of Science (B.S.) (<http://bulletin.vcu.edu/undergraduate/college-humanities-sciences/biology/biology-bs/#degreerequirementstext>)" (<http://bulletin.vcu.edu/undergraduate/college-humanities-sciences/biology/biology-bs/>) in the Undergraduate Bulletin.

A minimum GPA of 2.0 is required for all courses applicable to the minor. A minimum of nine upper-level biology credits must be taken at VCU.

BNFO 251/LFSC 251 and BNFO 252/LFSC 252 are approved course substitutes for BIOZ 151 and BIOZ 152, respectively.

Department of Chemistry

Maryanne Collinson, Ph.D.
Professor and chair

chemistry.vcu.edu (<https://chemistry.vcu.edu/>)

The Department of Chemistry offers programs leading to the Bachelor of Science, Master of Science and Doctor of Philosophy degrees. For undergraduate students, the Bachelor of Science offers concentrations in chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling.

For graduate students, the Master of Science and Doctor of Philosophy programs provide opportunities for concentrated study in analytical, inorganic, organic or physical chemistry, or chemical physics. A plan of study is worked out for each student to ensure a sound basis for research. In keeping with the university's commitment as an urban institution, the department also offers part-time programs leading to these degrees.

Refer to the department's website (<https://chemistry.vcu.edu/>) for more information.

- Chemistry, Bachelor of Science (B.S.) with a concentration in:
 - Biochemistry (p. 176)
 - Chemical modeling (p. 179)
 - Chemical science (p. 181)
 - Professional chemist (p. 185)
 - Professional chemist with honors (p. 187)
- Chemistry, minor in (p. 190)

Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The

department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The biochemistry concentration focuses on the biological aspects of chemistry, including molecular genetics and molecular biotechnology. This degree is another option for students planning to study medicine or dentistry.

Student learning outcomes

- Demonstrate student expertise in analytical, inorganic, organic and physical chemistry. Proficiency in the major concepts and theoretical principles of chemistry, especially the relationship between molecular structure and function. Demonstrate critical thinking and problem solving skills, such as the ability to perform calculations necessary to describe and model chemical phenomena.
- Develop of appropriate written and oral communication skills needed to explain chemical phenomena including summary reports, research papers, notebook writing, use of the chemical literature, group discussion during class and oral presentations.
- Demonstrate competency in laboratory skills in three areas: bench-top chemistry skills, usage of state-of-the-art instrumentation and computer usage.
- Demonstrate an understanding of the need for ethical practices in chemistry and an awareness of the practice of chemistry and the issues facing chemists and society. Focus on professionalism and career preparation..
- Demonstrate proficiency in proper procedures and regulations for safe handling and use of chemicals.
- Demonstrate proficiency in scientific literacy skills including searching, reading and critically reviewing, scientific publications.
- Demonstrate proficiency in information processing by generating and interpreting data represented in tables, graphs, drawings and models.

Special requirements

Students must complete 44-45 credits in chemistry and related courses and 44-46 credits of ancillary requirements in addition to general education requirements.

A minimum grade of C is required in each prerequisite course, except for CHEM 100, which requires a minimum grade of B.

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 309	Quantitative Analysis	3
CHEM 313	Physical Chemistry I	3
or CHEM 314	Physical Chemistry I with Math Modules	
CHEZ 101	General Chemistry Laboratory I	1

CHEZ 102	General Chemistry Laboratory II	1
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CHEZ 309	Quantitative Analysis Laboratory	2

VCU students in other programs who wish to declare chemistry as their major must complete CHEM 101, CHEZ 101, CHEM 102 and CHEZ 102, each with a minimum grade of C and have a minimum GPA in their chemistry courses of 2.0.

Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 315	Physical Chemistry II	3
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 499	Chemistry Capstone Experience ¹	0
• Concentration requirements		
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
Capstone requirement: one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 in addition to CHEM 403 or CHEM 404.		2
Major electives (select from list below)		5
Ancillary requirements		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4

HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3
PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
or PHYS 207	University Physics I	
PHYS 202 or PHYS 208	General Physics II University Physics II	4-5
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		11-22

Total Hours 120

¹

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 in addition to CHEM 404.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Major electives

Course	Title	Hours
BIOL 310	Genetics	3
CHEM 310	Medicinal Chemistry and Drug Design	3
CHEM 391	Topics in Chemistry	1-4
CHEM 392	Directed Study	1-4
CHEM 406	Inorganic Chemistry II	3
CHEZ 406	Inorganic Chemistry Laboratory	2
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
CHEM 491	Topics in Chemistry	1-4
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
CHEM 498	Honors Thesis	1
CHEZ 400	Exploring the Frontiers of Chemistry: Research Methods	2
CHEZ 413	Advanced Physical Chemistry Laboratory	2
CHEZ 404	Biochemistry Laboratory	2
CHEZ 451	Developing Instructional Experiments in Chemistry	2
CHEM 504	Advanced Organic Chemistry I	3
CHEM 507	Introduction to Natural Products	3
CHEM 520	Advanced Inorganic Chemistry	3

CHEM 510	Atomic and Molecular Structure	3
CHEM 511	Chemical Thermodynamics and Kinetics	3
CHEM 512	Applied Molecular Modeling	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	

Term Hours: 15

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	

Term Hours: 16

Sophomore year**Fall semester**

CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 398	Professional Practices and Perspectives Seminar	1
PHYS 201 or PHYS 207	General Physics I (either satisfies general education AOI for scientific and logical reasoning) or University Physics I	4-5
STAT 210 or STAT 212	Basic Practice of Statistics or Concepts of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 16-17

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5

Term Hours: 14-15

Junior year**Fall semester**

BIOL 300	Cellular and Molecular Biology	3
CHEM 313	Physical Chemistry I	3-4
	or or Physical Chemistry I with Math	
CHEM 314	Modules	
CHEZ 313	Physical Chemistry Laboratory I	2
	Foreign language 101	3
	General education course (select AOI for global perspectives)	3

Term Hours: 14-15

Spring semester

CHEM 315	Physical Chemistry II	3
CHEM 320	Inorganic Chemistry I	3
	Foreign language 102	3
	General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)	3
	General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)	3

Term Hours: 15

Senior year**Fall semester**

CHEM 403	Biochemistry I	3
	Major elective	3
	Open electives	9

Term Hours: 15

Spring semester

CHEM 404	Biochemistry II	3
CHEM 499	Chemistry Capstone Experience ¹	0
	Experiential fine arts	1-3
	Major elective	2
	Open electives	9

Term Hours: 15-17

Total Hours: 120-125

The minimum number of credit hours required for this degree is 120.

¹

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 in addition to CHEM 403.

Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The chemical modeling concentration emphasizes areas of overlap between chemistry and the mathematical sciences and computer science. Students in this concentration will focus on learning the chemistry and computer technology for modeling the structure, properties and reactivity of molecules.

Student learning outcomes

- Demonstrate student expertise in analytical, inorganic, organic and physical chemistry. Proficiency in the major concepts and theoretical principles of chemistry, especially the relationship between molecular structure and function. Demonstrate critical thinking and problem solving skills, such as the ability to perform calculations necessary to describe and model chemical phenomena.
- Develop of appropriate written and oral communication skills needed to explain chemical phenomena including summary reports, research papers, notebook writing, use of the chemical literature, group discussion during class and oral presentations.
- Demonstrate competency in laboratory skills in three areas: bench-top chemistry skills, usage of state-of-the-art instrumentation and computer usage.
- Demonstrate an understanding of the need for ethical practices in chemistry and an awareness of the practice of chemistry and the issues facing chemists and society. Focus on professionalism and career preparation..
- Demonstrate proficiency in proper procedures and regulations for safe handling and use of chemicals.
- Demonstrate proficiency in scientific literacy skills including searching, reading and critically reviewing, scientific publications.
- Demonstrate proficiency in information processing by generating and interpreting data represented in tables, graphs, drawings and models.

Special requirements

Students must complete 39-40 credits in chemistry and related major courses and 47 credits of ancillary requirements in addition to general education requirements.

A minimum grade of C is required in each prerequisite course except for CHEM 100, which requires a minimum of B.

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 309	Quantitative Analysis	3
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3
CHEZ 101	General Chemistry Laboratory I	1
CHEZ 102	General Chemistry Laboratory II	1
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CHEZ 309	Quantitative Analysis Laboratory	2

VCU students in other programs who wish to declare chemistry as their major must complete CHEM 101, CHEZ 101, CHEM 102 and CHEZ 102, each with a minimum grade of C and have a minimum GPA in their chemistry courses of 2.0.

Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 315	Physical Chemistry II	3
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 499	Chemistry Capstone Experience ¹	0
• Concentration requirements		
CHEM 510 or CHEM 512	Atomic and Molecular Structure Applied Molecular Modeling	3
CHEZ 413	Advanced Physical Chemistry Laboratory	2
• Major electives		
Select from the list below.		3
Ancillary requirements		

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CMSC 255	Introduction to Programming	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 302 or MATH 310	Numerical Calculus Linear Algebra	3
MATH 307	Multivariate Calculus	4
MEDC 541	Survey of Molecular Modeling Methods	1
PHYS 207 & PHYS 208	University Physics I and University Physics II (PHYS 207 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	10
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		15-24
Total Hours		120

1

Students in this concentration meet the capstone requirement by taking CHEM 510 (<http://bulletin.vcu.edu/search/?P=CHEM%20510>) or CHEM 512 (<http://bulletin.vcu.edu/search/?P=CHEM%20512>) and CHEZ 413 (<http://bulletin.vcu.edu/search/?P=CHEZ%20413>).

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Major electives

Course	Title	Hours
CHEM 492 or CHEM 392	Independent Study Directed Study	3
CHEM 504	Advanced Organic Chemistry I	3
CHEM 510 or CHEM 512	Atomic and Molecular Structure (may select course not taken as major requirement) Applied Molecular Modeling	3
CHEM 511	Chemical Thermodynamics and Kinetics	3
MATH 301	Differential Equations	3
OPER 327	Mathematical Modeling	3
STAT 321	Introduction to Statistical Computing	3

CHEZ 400	Exploring the Frontiers of Chemistry: Research Methods	2
CHEM 391	Topics in Chemistry	1-4
CHEM 409	Instrumental Analysis	3
CHEM 406	Inorganic Chemistry II	3
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111 Play course	Focused Inquiry I (satisfies general education UNIV foundations)	3
video for Focused Inquiry I		
General education course (select AOI for global perspectives)		3
Experiential fine arts		1-3
Term Hours:		15-17

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 210 or STAT 212	Basic Practice of Statistics or Concepts of Statistics	3
UNIV 112 Play course	Focused Inquiry II (satisfies general education UNIV foundations)	3
video for Focused Inquiry II		
Term Hours:		15

Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I (satisfies AOI for scientific and logical reasoning)	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		17

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 398	Professional Practices and Perspectives Seminar	1
PHYS 208	University Physics II	5

Term Hours: 16

Junior year

Fall semester

CHEM 313 or CHEM 314	Physical Chemistry I or Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 320	Inorganic Chemistry I	3
CMSC 255	Introduction to Programming	4
Foreign language 101		3

Term Hours: 15-16

Spring semester

CHEM 315	Physical Chemistry II	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)		3
General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)		3
Major elective		3

Term Hours: 15

Senior year

Fall semester

CHEM 510 or CHEM 512	Atomic and Molecular Structure or Applied Molecular Modeling	3
MEDC 541	Survey of Molecular Modeling Methods	1
Open electives		9

Term Hours: 13

Spring semester

CHEM 499	Chemistry Capstone Experience ¹	0
CHEZ 413	Advanced Physical Chemistry Laboratory	2
MATH 302 or MATH 310	Numerical Calculus or Linear Algebra	3
Open electives		9

Term Hours: 14

Total Hours: 120-123

1

Students in this concentration meet the capstone requirement by taking CHEM 510 (<http://bulletin.vcu.edu/search/?P=CHEM%20510>) or CHEM 512 (<http://bulletin.vcu.edu/search/?P=CHEM%20512>) and CHEZ 413 (<http://bulletin.vcu.edu/search/?P=CHEZ%20413>).

The minimum number of credit hours required for this degree is 120.

Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The chemical science concentration is tailored for the pre-professional study of the health sciences and other interdisciplinary areas where an emphasis on chemistry is sought. This concentration for the bachelor's degree in chemistry permits students to select more courses from other disciplines. With fewer requirements in mathematics, physics and chemistry, this concentration is one option for students planning to study medicine or dentistry.

Student learning outcomes

- Demonstrate student expertise in analytical, inorganic, organic and physical chemistry. Proficiency in the major concepts and theoretical principles of chemistry, especially the relationship between molecular structure and function. Demonstrate critical thinking and problem solving skills, such as the ability to perform calculations necessary to describe and model chemical phenomena.
- Develop of appropriate written and oral communication skills needed to explain chemical phenomena including summary reports, research papers, notebook writing, use of the chemical literature, group discussion during class and oral presentations.
- Demonstrate competency in laboratory skills in three areas: bench-top chemistry skills, usage of state-of-the-art instrumentation and computer usage.
- Demonstrate an understanding of the need for ethical practices in chemistry and an awareness of the practice of chemistry and the issues facing chemists and society. Focus on professionalism and career preparation..
- Demonstrate proficiency in proper procedures and regulations for safe handling and use of chemicals.
- Demonstrate proficiency in scientific literacy skills including searching, reading and critically reviewing, scientific publications.
- Demonstrate proficiency in information processing by generating and interpreting data represented in tables, graphs, drawings and models.

Special requirements

Students must complete 36-37 credits in chemistry and 33-35 credits of ancillary requirements in addition to general education requirements.

A minimum grade of C is required in each prerequisite course except for CHEM 100, which requires a minimum grade of B.

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 309	Quantitative Analysis	3
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEZ 101	General Chemistry Laboratory I	1
CHEZ 102	General Chemistry Laboratory II	1
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CHEZ 309	Quantitative Analysis Laboratory	2

VCU students in other programs who wish to declare chemistry as their major must complete CHEM 101, CHEZ 101, CHEM 102 and CHEZ 102, each with a minimum grade of C and have a minimum GPA in their chemistry courses of 2.0.

Degree requirements Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

• Major core requirements

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEM 315	Physical Chemistry II	3
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 499	Chemistry Capstone Experience ¹	0

• Additional major requirements

Capstone requirements

Select at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 and at least one three-credit 400- or 500-level CHEM course from the electives listed below.	5
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Ancillary requirements

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3
Physics sequence (select one sequence)		8-10
PHYS 201 & PHYS 202	General Physics I and General Physics II (PHYS 201 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	
PHYS 207 & PHYS 208	University Physics I and University Physics II (PHYS 207 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	

Experiential fine arts ² 1-3

Foreign language through the 102 level (by course or placement) 0-6

Open electives

Select any course. 30-41

Total Hours 120

1

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 (<http://bulletin.vcu.edu/search/?P=CHEM%20392>) or CHEM 492 (<http://bulletin.vcu.edu/search/?P=CHEM%20492>) and at least one three-credit 400- or 500-level CHEM course from the electives list.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Major electives

Course	Title	Hours
CHEM 310	Medicinal Chemistry and Drug Design	3
CHEM 350	Guided Inquiry in Chemistry	1.5
CHEM 351	Chemistry Preceptorship	1.5
CHEM 391	Topics in Chemistry	1-4
CHEM 392	Directed Study	1-4
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
CHEM 406 & CHEZ 406	Inorganic Chemistry II and Inorganic Chemistry Laboratory	5
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
CHEM 491	Topics in Chemistry	1-4
CHEM 492	Independent Study	1-4

CHEM 493	Chemistry Internship	1-3
CHEM 498	Honors Thesis	1
CHEM 504	Advanced Organic Chemistry I	3
CHEM 510	Atomic and Molecular Structure	3
CHEM 512	Applied Molecular Modeling	3
CHEM 511	Chemical Thermodynamics and Kinetics	3
CHEZ 400	Exploring the Frontiers of Chemistry: Research Methods	2
CHEZ 413	Advanced Physical Chemistry Laboratory	2
CHEZ 451	Developing Instructional Experiments in Chemistry	2

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for global perspectives)	3
	General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)	3
Term Hours:		17

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
Term Hours:		15

Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5

PHYS 201	General Physics I (either satisfies AOI for scientific and logical reasoning)	4-5
or		
PHYS 207	or University Physics I	
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 17-18

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
PHYS 202	General Physics II	4-5
or		
PHYS 208	or University Physics II	

Term Hours: 13-14

Junior year

Fall semester

CHEM 313	Physical Chemistry I	3-4
or		
CHEM 314	or Physical Chemistry I with Math Modules	
CHEZ 313	Physical Chemistry Laboratory I	2
Foreign language 101		3
General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)		3
Open elective		3

Term Hours: 14-15

Spring semester

CHEM 315	Physical Chemistry II	3
Foreign language 102		3
Open electives		9

Term Hours: 15

Senior year

Fall semester

CHEM 499	Chemistry Capstone Experience ¹	0
Major electives (for capstone) ¹		5
Open electives		9

Term Hours: 14

Spring semester

Experiential fine arts		1-3
Open electives		14

Term Hours: 15-17

Total Hours: 120-125

1

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 (<http://bulletin.vcu.edu/search/?P=CHEM%20392>) or CHEM 492 (<http://bulletin.vcu.edu/search/?P=CHEM%20492>) and at least one three-credit 400- or 500-level CHEM course from the electives list.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Chemistry in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have had advanced training in chemistry through a combination of laboratory and classroom work and gained important professional development skills. Students may have the ability to design and incorporate graduate courses in another discipline as part of the accelerated program based on their career objectives. The goal of the accelerated program is to significantly enhance the student's qualifications to pursue a career in industry, teaching or the government. Alternatively, students who distinguish themselves may be able to pursue advanced study at the doctoral level in chemistry or chemical biology on an accelerated timetable.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including CHEM 313 or CHEM 314, CHEZ 313, CHEM 315, CHEM 320, CHEM 302 and CHEZ 302, and CHEM 309 and CHEZ 309; a minimum overall GPA of 3.0; and a minimum GPA of 3.25 in chemistry course work. Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The graduate admissions committee in chemistry will evaluate the application and make a recommendation to the graduate school for admission. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than May 15 of that year. Three reference letters (at least one from a chemistry faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the graduate faculty adviser to the chemistry master's program before they have completed 60 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate chemistry adviser and the faculty adviser to the chemistry graduate program.

Degree requirements

The Bachelor of Science in Chemistry with a concentration in chemical science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree

requirements as stated in the Undergraduate Bulletin. Students in the accelerated program will be required to take CHEM 409 and CHEZ 409 during the fall semester of senior year, as well as three credits of CHEM 392 or CHEM 492 each semester of the senior year in lieu of some elective course work.

A maximum of nine graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute as open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Undergraduate students admitted to the accelerated program may select nine credits from the four approved courses below.

Course	Title	Hours
CHEM 504	Advanced Organic Chemistry I	3
CHEM 510	Atomic and Molecular Structure	3
CHEM 511	Chemical Thermodynamics and Kinetics	3
CHEM 520	Advanced Inorganic Chemistry	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students in the chemical science concentration in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I (if taken)	2
	General education course	3
	General education courses or open electives	6
	Term Hours:	14-15
Spring semester		
CHEM 315	Physical Chemistry II	3
	Foreign language (101 level)	4
	Open electives	9
	Term Hours:	15
Senior year		
Fall semester		
CHEM 392 or CHEM 492	Directed Study Independent Study	3
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
CHEM 499	Chemistry Capstone Experience ¹	0
	Approved graduate chemistry course (from list above)	3
	Foreign language (102 level)	4
	Open elective	3
	Term Hours:	17
Spring semester		
CHEM 392 or CHEM 492	Directed Study Independent Study	3

Approved graduate chemistry courses (from list above)	6	
Experiential fine arts	3	
Open elective	3	
Term Hours:	15	
Fifth year		
Fall semester		
CHEM 693	Chemistry Perspectives and Ethics	1
CHEM 696	Professional Skill Development	3
CHEM 698	Investigations in Current Chemistry Literature	1
Electives	6	
Term Hours:	11	
Spring semester		
CHEM 692	Chemistry Seminar Presentation	1
CHEM 696	Professional Skill Development	6
or CHEM 697	Directed Research	
Elective	3	
Term Hours:	10	

Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The professional chemist concentration requires a greater number of chemistry courses, and is designed for students whose future studies or career plans involve chemistry as a central theme. With the proper combination of courses, this degree can be certified as meeting the requirements of the American Chemical Society.

Student learning outcomes

- Demonstrate student expertise in analytical, inorganic, organic and physical chemistry. Proficiency in the major concepts and theoretical principles of chemistry, especially the relationship between molecular structure and function. Demonstrate critical thinking and problem solving skills, such as the ability to perform calculations necessary to describe and model chemical phenomena.
- Develop of appropriate written and oral communication skills needed to explain chemical phenomena including summary reports, research papers, notebook writing, use of the chemical literature, group discussion during class and oral presentations.
- Demonstrate competency in laboratory skills in three areas: bench-top chemistry skills, usage of state-of-the-art instrumentation and computer usage.

- Demonstrate an understanding of the need for ethical practices in chemistry and an awareness of the practice of chemistry and the issues facing chemists and society. Focus on professionalism and career preparation..
- Demonstrate proficiency in proper procedures and regulations for safe handling and use of chemicals.
- Demonstrate proficiency in scientific literacy skills including searching, reading and critically reviewing, scientific publications.
- Demonstrate proficiency in information processing by generating and interpreting data represented in tables, graphs, drawings and models.

Special requirements

Students must complete 48-49 credits in chemistry and 28-36 credits of ancillary requirements in addition to general education requirements.

A minimum grade of C is required in each prerequisite course except for CHEM 100, which requires a minimum grade of B:

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 309	Quantitative Analysis	3
CHEM 313	Physical Chemistry I	3
or CHEM 314	Physical Chemistry I with Math Modules	
CHEZ 101	General Chemistry Laboratory I	1
CHEZ 102	General Chemistry Laboratory II	1
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CHEZ 309	Quantitative Analysis Laboratory	2

VCU students in other programs who wish to declare chemistry as their major must complete CHEM 101, CHEZ 101, CHEM 102 and CHEZ 102, each with a minimum grade of C and have a minimum GPA in their chemistry courses of 2.0.

Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5

CHEM 313 or CHEM 314	Physical Chemistry I Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 315	Physical Chemistry II	3
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 499	Chemistry Capstone Experience ¹	0
• Concentration requirements		
CHEZ 413	Advanced Physical Chemistry Laboratory	2
• Capstone requirements		
Select at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 and at least one three-credit 400- or 500-level CHEM course from the electives listed below.		5
• Major electives		
Select from the list below.		10
Ancillary requirements		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 307	Multivariate Calculus	4
PHYS 207 & PHYS 208	University Physics I and University Physics II (PHYS 207 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	10
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		17-26
Total Hours		120

1

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 and at least one three-credit 400- or 500-level CHEM course from the electives listed below.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Major electives

Course	Title	Hours
CHEM/CLSE 306	Industrial Applications of Inorganic Chemistry	3
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 391	Topics in Chemistry	1-4
CHEM 392	Directed Study	1-4
CHEM 403	Biochemistry I ¹	3
CHEM 404	Biochemistry II	3
CHEZ 404	Biochemistry Laboratory	2
CHEM 406 & CHEZ 406	Inorganic Chemistry II and Inorganic Chemistry Laboratory ¹	5
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory ¹	5
CHEM 491	Topics in Chemistry	1-4
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
CHEM 504	Advanced Organic Chemistry I	3
CHEM 507	Introduction to Natural Products	3
CHEM 510	Atomic and Molecular Structure	3
CHEM 511	Chemical Thermodynamics and Kinetics	3
CHEM 512	Applied Molecular Modeling	3
CHEM 520	Advanced Inorganic Chemistry	3
CHEZ 400	Exploring the Frontiers of Chemistry: Research Methods	2
CHEZ 451	Developing Instructional Experiments in Chemistry	2

1

These five courses are necessary to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
CHEM 101 & CHEZ 101	4
General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	
HUMS 202	1
Choices in a Consumer Society	
MATH 200	4
Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	
UNIV 111 Play course video for Focused Inquiry I	3
Focused Inquiry I (satisfies general education UNIV foundations)	

General education course (select AOI for global perspectives) 3

Term Hours: 15

Spring semester

CHEM 102 General Chemistry II 4
& CHEZ 102 and General Chemistry Laboratory II

MATH 201 Calculus with Analytic Geometry II 4

PHYS 207 University Physics I (satisfies general education AOI for scientific and logical reasoning) 5

UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) 3

Play course video for Focused Inquiry II

Term Hours: 16

Sophomore year

Fall semester

CHEM 301 Organic Chemistry 5
& CHEZ 301 and Organic Chemistry Laboratory I

CHEM 309 Quantitative Analysis 5
& CHEZ 309 and Quantitative Analysis Laboratory

MATH 307 Multivariate Calculus ¹ 4

UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations) 3

Term Hours: 17

Spring semester

CHEM 302 Organic Chemistry 5
& CHEZ 302 and Organic Chemistry Laboratory II

CHEM 320 Inorganic Chemistry I 3

CHEM 398 Professional Practices and Perspectives Seminar 1

PHYS 208 University Physics II 5

Term Hours: 14

Junior year

Fall semester

CHEM 313 Physical Chemistry I 3-4
or or Physical Chemistry I with Math
CHEM 314 Modules

CHEZ 313 Physical Chemistry Laboratory I 2

Foreign language 101 3

General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience) 3

Open elective (CHEM 403 suggested) ¹ 3

Term Hours: 14-15

Spring semester

CHEM 315 Physical Chemistry II 3

CHEZ 413 Advanced Physical Chemistry Laboratory 2

Foreign language 102 3

General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry) 3

Open electives 4

Term Hours: 15

Senior year

Fall semester

CHEM 499 Chemistry Capstone Experience ² 0

Major electives to satisfy capstone (CHEM 409 and CHEZ 409 suggested) ¹ 5

Experiential fine arts 1-3

Open electives 9

Term Hours: 15-17

Spring semester

Major electives (CHEM 406 and CHEZ 406 suggested) ¹ 5

Open electives 9

Term Hours: 14

Total Hours: 120-123

¹

Required for American Chemical Society Certification.

²

Students in this concentration meet the capstone requirement by taking at least one two-credit 400-level CHEZ course or two credits of CHEM 392 or CHEM 492 and at least one three-credit 400- or 500-level CHEM course from the electives list. Note course recommendations in the plan of study.

The minimum number of credit hours required for this degree is 120.

Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

Student learning outcomes

- Demonstrate student expertise in analytical, inorganic, organic and physical chemistry. Proficiency in the major concepts and theoretical principles of chemistry, especially the relationship between molecular structure and function. Demonstrate critical thinking and problem solving skills, such as the ability to perform calculations necessary to describe and model chemical phenomena.
- Develop of appropriate written and oral communication skills needed to explain chemical phenomena including summary reports, research papers, notebook writing, use of the chemical literature, group discussion during class and oral presentations.

- Demonstrate competency in laboratory skills in three areas: bench-top chemistry skills, usage of state-of-the-art instrumentation and computer usage.
- Demonstrate an understanding of the need for ethical practices in chemistry and an awareness of the practice of chemistry and the issues facing chemists and society. Focus on professionalism and career preparation..
- Demonstrate proficiency in proper procedures and regulations for safe handling and use of chemicals.
- Demonstrate proficiency in scientific literacy skills including searching, reading and critically reviewing, scientific publications.
- Demonstrate proficiency in information processing by generating and interpreting data represented in tables, graphs, drawings and models.

Special requirements

The professional chemist with honors concentration is an intensive, research-based option for students interested in developing a research focus. This option requires a 3.0 GPA in chemistry to be maintained after completing eight credits of chemistry courses. As part of the requirement for completing this concentration, an honors thesis is written and the work is presented as a seminar in the Department of Chemistry. With the proper combination of courses, this degree can be certified as meeting the requirements of the American Chemical Society.

CHEM 403 and CHEM 406 and CHEZ 406 and CHEM 409 and CHEZ 409 are required to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification.

Students must complete 46-47 credits in chemistry and 36 credits of ancillary requirements in addition to general education requirements. A minimum grade of C is required in each prerequisite course except for CHEM 100, which requires a minimum of B.

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 309	Quantitative Analysis	3
CHEM 313	Physical Chemistry I	3
or CHEM 314	Physical Chemistry I with Math Modules	
CHEZ 101	General Chemistry Laboratory I	1
CHEZ 102	General Chemistry Laboratory II	1
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CHEZ 309	Quantitative Analysis Laboratory	2

VCU students in other programs who wish to declare chemistry as their major must complete CHEM 101, CHEZ 101, CHEM 102 and CHEZ 102, each with a minimum grade of C and have a minimum GPA in their chemistry courses of 2.0.

Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 313	Physical Chemistry I	3-4
or CHEM 314	Physical Chemistry I with Math Modules	
CHEM 315	Physical Chemistry II	3
CHEZ 313	Physical Chemistry Laboratory I	2
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 499	Chemistry Capstone Experience ¹	0
• Concentration requirements		
CHEM 492	Independent Study (repeated for 6 credits)	6
CHEM 498	Honors Thesis	1
CHEZ 413	Advanced Physical Chemistry Laboratory	2
• Major electives		
Select from the lists below.		6
Ancillary requirements		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 307	Multivariate Calculus	4
PHYS 207 & PHYS 208	University Physics I and University Physics II (PHYS 207 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	10
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		

Select any course. 19-28

Total Hours 120

1

Students in this concentration meet the capstone requirement by taking other courses within the program.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Junior chemistry electives

Course	Title	Hours
CHEM 306	Industrial Applications of Inorganic Chemistry	3
CHEM 310	Medicinal Chemistry and Drug Design	3
CHEM 350	Guided Inquiry in Chemistry	1.5
CHEM 351	Chemistry Preceptorship	1.5
CHEM 403	Biochemistry I ¹	3
CHEM 404	Biochemistry II	3
CHEZ 404	Biochemistry Laboratory	2
CHEZ 413	Advanced Physical Chemistry Laboratory	2
CHEZ 400	Exploring the Frontiers of Chemistry: Research Methods	2
CHEZ 451	Developing Instructional Experiments in Chemistry	2

Senior chemistry electives

Course	Title	Hours
CHEM 403	Biochemistry I (if not taken as junior) ¹	3
CHEM 404	Biochemistry II (if not taken as junior)	3
CHEM 406 & CHEZ 406	Inorganic Chemistry II and Inorganic Chemistry Laboratory ¹	5
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory ¹	5
CHEM 491	Topics in Chemistry	1-4
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
CHEM 504	Advanced Organic Chemistry I	3
CHEM 510	Atomic and Molecular Structure	3
CHEM 512	Applied Molecular Modeling	3
CHEM 520	Advanced Inorganic Chemistry	3

1

These five courses are required to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select AOI for global perspectives)		3

Term Hours: 15

Spring semester

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		

Term Hours: 16

Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 17

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
PHYS 208	University Physics II	5

Term Hours: 14

Junior year

Fall semester		Hours
CHEM 313 or CHEM 314	Physical Chemistry I or Physical Chemistry I with Math Modules	3-4
CHEZ 313	Physical Chemistry Laboratory I	2

Foreign language 101	3
General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)	3
Major elective	3
Term Hours:	14-15
Spring semester	
CHEM 315 Physical Chemistry II	3
CHEM 492 Independent Study	3
Foreign language 102	3
General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)	3
Major elective	3
Term Hours:	15
Senior year	
Fall semester	
CHEM 492 Independent Study	3
CHEM 499 Chemistry Capstone Experience ¹	0
Experiential fine arts	1-3
Open electives	9
Term Hours:	13-15
Spring semester	
CHEM 498 Honors Thesis	1
CHEZ 413 Advanced Physical Chemistry Laboratory	2
Open electives	13
Term Hours:	16
Total Hours:	120-123

1

Students in this concentration meet the capstone requirement by taking other courses within the program.

The minimum number of credit hours required for this degree is 120.

Chemistry, minor in

The minor in chemistry requires the following courses:

Course	Title	Hours
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
Select one additional three-credit upper-level (300-400) chemistry course		3
Total Hours		21

A minimum of nine upper-level chemistry credits must be taken at VCU. Consult course descriptions for prerequisites in mathematics and physics.

Department of English

Catherine Ingrassia, Ph.D.
Professor and chair

Sachi Shimomura, Ph.D.
Associate professor and associate chair

Gretchen Comba
Teaching associate professor and director of undergraduate studies

Jennifer Rhee, Ph.D.
Associate professor and director of the M.A. program

David Wojahn
Professor and director of the creative writing program

Oliver C. Speck, Ph.D.
Associate professor of film studies and director of the MATX program
[english.vcu.edu](http://www.english.vcu.edu) (<http://www.english.vcu.edu>)

The purpose of the Department of English is to teach students to see their worlds with clarity and respond to them with sensitivity, through reading and writing. Students are invited to read and explore a diversity of texts created in different times and voices and then to respond to these texts variously and critically, situating them within their contexts and discerning their important aesthetic features, rhetorical elements and social functions.

Students in this department also are encouraged to express themselves in expository or imaginative works that engage thought and feeling, evince purpose clearly, marshal appropriate evidence and observe principles of rhetorical decorum.

The Department of English offers a Bachelor of Arts in English, as well as minors in American studies, British studies, English (for non-English majors), creative writing, professional writing and editing; the Master of Arts in English and the Master of Fine Arts in Creative Writing; and a doctoral program leading to a Ph.D. in Media, Art, and Text. Use the program index links to view individual program descriptions and curricula, or visit the department's website (<http://www.english.vcu.edu>) for additional information.

- English, Bachelor of Arts (B.A.) (p. 190)
- American studies, minor in (p. 194)
- British studies, minor in (p. 195)
- Creative writing, minor in (p. 195)
- English, minor in (p. 196)
- Professional writing and editing, minor in (p. 197)

English, Bachelor of Arts (B.A.)

The Bachelor of Arts program in English requires a minimum of 120 credits, with at least 33 upper-level (numbered 300 to 499) credits in the major. Six of the 33 credits may be taken in upper-level foreign literature read in the original language or upper-level foreign literature in English translation (FLET). UNIV 111 and UNIV 112 (or equivalent) and a 200-level literature course (or equivalent) do not count toward the major.

English majors must take a minimum of nine credits at the 400 level, including the senior seminar, ENGL 499. Students may expect 300-level courses in the department to emphasize historical breadth,

while 400-level courses will offer in-depth focus. ENGL 410-ENGL 414, ENGL 480-ENGL 485 and ENGL 499 will include British, American or other literatures (world, transatlantic, etc.). For specific topics, see the Schedule of Classes; majors are encouraged to choose 400-level courses from more than one literary tradition (British, American, other literatures).

Program goals and student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Read closely a wide variety of texts from diverse traditions and recognize how texts are shaped by historical, geographical and generic contexts
 - Learning outcome 1: Employ strategies for interpreting form and ideas through close reading in order to build knowledge of human experience
 - Learning outcome 2: Demonstrate competence at synthesizing ideas within given contexts and perspectives
- Write clear and effective compositions that reflect their understanding of literary genres, critical perspectives and rhetorical purposes
 - Learning outcome 3: Evince a thorough understanding of context, audience and purpose
 - Learning outcome 4: Organize and synthesize ideas to reveal insightful patterns related to the focus of the writing assignment
- Employ various strategies for research in order to write persuasive essays
 - Learning outcome 5: Demonstrate discernment at engaging high-quality, credible, relevant sources as parts of published scholarly conversations
 - Learning outcome 6: Integrate evidence into a well-structured, logical argument

Degree requirements for English, Bachelor of Arts

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ENGL 301	Introduction to the English Major	3
ENGL 499	Senior Seminar in English	3
• Additional major requirements		
Linguistics, writing, criticism: Select one course from two of the three areas. (See list below.)		6
Literature: Select two courses in literature prior to 1700. (See list below.)		6
Literature: Select two courses in literature between 1700 and 1945. (See list below.)		6
Literature of diversity: Select one course. (See list below.)		3
• Major electives		
Select required elective/optional focus credits. (See description below.)		6-9
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3

Foreign language through the 102 level (by course or placement)		0-6
Literary contexts: Complete a foreign language through the 202 or 205 level by course or placement or select six credits in literary history and culture from:		0-6
ENGL 201	Western World Literature I	
ENGL 202	Western World Literature II	
ENGL 203	British Literature I	
ENGL 204	British Literature II	
ENGL 205	American Literature I	
ENGL 206	American Literature II	
ENGL 211	Contemporary World Literature	
ENGL 236	Women in Literature	
ENGL 291	Topics in Literature	
FLET 321	Early German Literature	
FLET 322	Modern German Literature	
FLET 391	Topics in Foreign Literature in English Translation	

Open electives	
Select any course.	38-55
Total Hours	120

1
Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Major requirements lists

Course	Title	Hours
Linguistics, writing, criticism		
Select one course from two of these three areas for six credits.		
• Linguistics		
ENGL/ANTH/LING 390	Introduction to Linguistics	3
ENGL 392/ ANTH 328/FRLG 328/LING 392	Language, Culture and Cognition	3
ENGL/LING 450	Modern Grammar	3
ENGL/LING 451	History of the English Language	3
ENGL/GSWS/LING 452	Language and Gender	3
ENGL/LING 453	Modern Rhetoric	3
ENGL/INTL 454/ ANTH 450	Cross-cultural Communication	3
• Writing		
ENGL/CRJS 302	Legal Writing	3
ENGL 303	Writing for Stage and/or Screen	3
ENGL 304	Persuasive Writing	3
ENGL 305	Writing Poetry	3
ENGL 307	Writing Fiction	3
ENGL 309	Writing Creative Nonfiction	3
ENGL 310	Professional Writing	3
ENGL 350	Digital Rhetoric	3

ENGL 367	Writing Process and Practice	3	ENGL 371	American Literary Beginnings	3
ENGL 388	Professional, Scientific and Technical Writing	3	ENGL 372	U.S. Literature: 1820-1865	3
ENGL/TEDU 389	The Teaching of Writing Skills	3	ENGL 373	U.S. Literature: 1865-1913	3
ENGL 433/THEA 426	Advanced Dramatic Writing	3	ENGL 374	U.S. Literature: Modernism	3
ENGL 435	Advanced Poetry Writing	3	ENGL 377	19th-century U.S. Novels and Narratives	3
ENGL 437	Advanced Fiction Writing	3	ENGL 391	Topics in Literature (by specific topic)	3
ENGL 439	Advanced Creative Nonfiction Writing	3	ENGL 412	18th-century Studies: ____	3
ENGL 441	Literary Technique: ____	3	ENGL 413	19th-century Studies: ____	3
ENGL 491	Topics in Writing (by specific topic)	3	ENGL 480	Authors: ____ (by specific topic)	3
• Criticism			ENGL 481	Genres: ____ (by specific topic)	3
ENGL 311	Introduction to Literary Theory	3	ENGL 482	Literary Topics: ____ (by specific topic)	3
ENGL/GSWS 352	Feminist Literary Theory	3	ENGL 483	Literary Texts and Contexts: ____ (by specific topic)	3
ENGL 391	Topics in Literature (by specific topic)	3	ENGL 484	Literary Movements: ____ (by specific topic)	3
ENGL 445	Form and Theory of Poetry	3	AMST 391	Topics in American Studies (by specific topic)	3
ENGL 447	Form and Theory of Fiction	3	AMST 394	Perspectives in American Studies (by specific topic)	3
ENGL 449	Form and Theory of Creative Nonfiction	3			
ENGL 485	Literary Theory and Criticism: ____	3			
Literature					
Select two courses in literature prior to 1700 for six credits. ¹			Select one course in the literature of diversity for three credits. ¹		
ENGL 320	Early Literary Traditions	3	ENGL/GSWS 353	Women's Writing	3
ENGL 321	English Drama From 900 to 1642	3	ENGL/GSWS 354	Queer Literature: ____	3
ENGL 322	Medieval Literature: Old English to Middle English	3	ENGL/AFAM 363/ INTL 366	African Literature	3
ENGL 324	Late Medieval Literature	3	ENGL 364	Mythology and Folklore	3
ENGL 325	Early Modern Literature	3	ENGL/AFAM 365/ INTL 367	Caribbean Literature	3
ENGL 326	Shakespeare in Context	3	ENGL 366	Writing and Social Change: ____	3
ENGL/RELS 361	The Bible as Literature	3	ENGL/AFAM 379	African-American Literature: Beginnings Through the Harlem Renaissance	3
ENGL 391	Topics in Literature (by specific topic)	3	ENGL 381	Multiethnic Literature	3
ENGL 401	Shakespeare	3	ENGL 382	African-American Literature: Realism to the Present	3
ENGL 402	Chaucer	3	ENGL 391	Topics in Literature (by specific topic)	3
ENGL 403	Milton	3	ENGL 480	Authors: ____ (by specific topic)	3
ENGL 410	Medieval Studies: ____	3	ENGL 481	Genres: ____ (by specific topic)	3
ENGL 411	Early Modern Studies: ____	3	ENGL 482	Literary Topics: ____ (by specific topic)	3
ENGL 480	Authors: ____ (by specific topic)	3	ENGL 483	Literary Texts and Contexts: ____ (by specific topic)	3
ENGL 481	Genres: ____ (by specific topic)	3	ENGL 484	Literary Movements: ____ (by specific topic)	3
ENGL 482	Literary Topics: ____ (by specific topic)	3			
ENGL 483	Literary Texts and Contexts: ____ (by specific topic)	3			
ENGL 484	Literary Movements: ____ (by specific topic)	3			
Select two courses in literature between 1700 and 1945 for six credits. ¹					
ENGL 330	Restoration and 18th-century Drama	3			
ENGL 331	Restoration and 18th-century British Literature	3			
ENGL 332	18th-century British Novels and Narratives	3			
ENGL 335	British Literature of the Romantic Era	3			
ENGL 336	19th-century British Novels and Narratives	3			
ENGL 337	Victorian Poetry	3			
ENGL 340	Early 20th-century British Literature	3			

1

No single course may be used to satisfy two of these requirements.

Required electives/optional focus

As part of the English major, electives allow students to take courses of particular interest to them. Electives may not be used to satisfy any other requirements for the major, except ENGL 499. In consultation with an adviser, students are encouraged to cluster their elective courses in one of the following focus areas.

- Literary studies (including courses grouped by historical period, genre, region, national and minority traditions, thematics, literary movement, literary influence, etc.)

- Writing (including both expository and creative writing)
- Criticism and theory (including approaches to literature, form and theory courses, etc.)
- Cultural studies (including courses that focus on race, class, gender, ethnicity, film, popular culture, etc.)
- Linguistics (including courses that focus on history of the language, cross-cultural communications, etc.)

Students are advised to consult the full listing and description of English courses before planning their elective courses.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	video for Focused Inquiry I	
	Foreign language 101	3
	General education course (select quantitative foundations; MATH 131 or STAT 208 recommended)	3
	General education course (select BOK for humanities/ fine arts and AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select BOK for social/ behavioral sciences and AOI for diversities in human experience)	3
Term Hours:		15

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	video for Focused Inquiry II	
	Experiential fine arts	1-3
	Foreign language 102	3
	General education course (select AOI for global perspectives)	3
	General education course (select BOK for natural science and AOI for scientific and logical reasoning)	3
Term Hours:		14-16

Sophomore year

Fall semester		Hours
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course (select any AOI)	3
	General education course (select any AOI)	3
	Literary contexts: literary history and culture course (from list) or foreign language (201)	3
	Open elective	3
Term Hours:		15

Spring semester

ENGL 301	Introduction to the English Major	3
	Linguistics, writing or criticism (from list)	3
	Literary contexts: literary history and culture course (from list) or foreign language (202 or 205)	3
	Literature between 1700 and 1945 (from list)	3
	Open electives	4
Term Hours:		16

Junior year

Fall semester		Hours
	Linguistics, writing or criticism (from list)	3
	Literature of diversity (from list)	3
	Literature prior to 1700 (from list)	3
	Open electives	6
Term Hours:		15

Spring semester

	ENGL 400-level elective	3
	Literature prior to 1700 (from list)	3
	Literature between 1700 and 1945 (from list)	3
	Open electives	6
Term Hours:		15

Senior year

Fall semester		Hours
	ENGL 400-level elective	3
	Open electives	12
Term Hours:		15
Spring semester		Hours
	ENGL 499 Senior Seminar in English	3
	Open electives	12
Term Hours:		15
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.A.

The accelerated B.A. and M.A. program allows qualified students to earn both the B.A. and M.A. in English in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count a maximum of 12 credit hours of graduate courses toward both the B.A. and M.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

The accelerated M.A. in English program is designed for students who wish for continued study of and competency in the discipline and/or are considering a Ph.D. in English.

Admission to the program

Minimum qualifications for admittance to the program include completion of at least 60 and no more than 75 undergraduate credit hours including ENGL 301 and a minimum of three courses at the 300 or 400 level (completion of a course in the 480s is strongly recommended) or permission of the chair; an overall GPA of 3.0; and a GPA of 3.5 in English course work. Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than March 1 of that year. A minimum of two letters of reference (at least one from an English faculty member) and a paper of any length written in a 300- or 400-level English course that demonstrates the student's commitment to the discipline must accompany the application. Students who are interested in the accelerated program should consult with the either the director of undergraduate studies, the coordinator of undergraduate advising or the graduate programs adviser before they have completed 60-75 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided initially by the coordinator of undergraduate advising, and then the director of the master's program and coordinator of graduate programs. If a student who is admitted to the program chooses not to complete the degree, the graduate credits hours will be applied to the B.A. The department is committed to providing strong and seamless mentoring and advising for students in this program.

Degree requirements

The Bachelor of Arts in English will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. Up to 12 of these graduate credits will substitute for open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate English courses that may be taken as an undergraduate, once a student is admitted to the program, are listed below. Additionally, students have the option to take ENGL 501, but only 12 graduate credits may be shared between the two degrees.

Course	Title	Hours
ENGL 560	Studies in British Literature and Culture	3
ENGL 570	Special Topics in American Literature and Culture	3
ENGL 605	Introduction to Scholarship in English Studies	3
ENGL 606	Literary Criticism	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior

to admission to the accelerated program in the senior year. **Note: It is recommended that students take at least one course numbered in the 480s during the junior year.**

Course	Title	Hours
Junior year		
Fall semester		
ENGL 300- or 400-level linguistics, writing or criticism		3
ENGL 300- or 400-level literature of diversity		3
ENGL 300- or 400-level literature prior to 1700		3
Open electives		6
Term Hours:		15
Spring semester		
ENGL 300- or 400-level literature prior to 1700		3
ENGL 300- or 400-level literature between 1700 and 1945		3
ENGL 400-level elective		3
Open electives		3-6
Term Hours:		12-15
Senior year		
Fall semester		
ENGL 499	Senior Seminar in English	3
ENGL 570	Special Topics in American Literature and Culture	3
or ENGL 560	Studies in British Literature and Culture	
ENGL 605	Introduction to Scholarship in English Studies	3
Open electives		6
Term Hours:		15
Spring semester		
ENGL 560	Studies in British Literature and Culture	3
or ENGL 570	Special Topics in American Literature and Culture	
ENGL 606	Literary Criticism	3
ENGL 400-level electives		9
Term Hours:		15
Fifth year		
Fall semester		
ENGL 692	Independent Study	3
Literature courses (500- to 600-level ENGL)		6
Term Hours:		9
Spring semester		
ENGL 692	Independent Study	3
ENGL 695	Directed Study/Major Project and Presentation	3
Literature course (500- to 600-level ENGL)		3
Term Hours:		9

American studies, minor in

The minor in American studies consists of at least 18 upper-level credits to be distributed as follows:

Course	Title	Hours
Select six credits in American studies (AMST) courses		6
Select three credits in humanities electives		3
Select three credits in social science electives		3

Select six credits in either humanities, social science or other approved electives, or in independent study 6

Total Hours 18

All courses selected to fulfill distribution areas must deal with American materials and topics. A list of recommended courses and electives is available from the coordinator.

British studies, minor in

David Latané, Ph.D.

Professor and coordinator, British studies

The minor in British studies requires at least 18 credits, 15 of which must be taken at the 300 level or above. Courses must come from at least two different departments.

Course	Title	Hours
Core 1: Modern Britain		
Select one of the following:		3
ENGL 341	British Literature and Culture After 1945	
ENGL 391	Topics in Literature (as appropriate)	
or ENGL 491	Topics in Writing	
HUMS 391	Special Topics in the Humanities and Sciences (as appropriate)	
HIST 325	History of Modern Britain	
Core 2: British origins		
Select one of the following:		3
ENGL 401	Shakespeare	
ENGL 402	Chaucer	
ENGL 403	Milton	
ENGL 412	18th-century Studies: ____	
HIST 324	History of Early Modern Britain	
Core 3: Britain's impact on the world		
Select one of the following:		3
ENGL 365/ AFAM 356/ INTL 367	Caribbean Literature	
ENGL 371	American Literary Beginnings	
HIST 326	The British Empire	
HIST 345	American Colonies, 1450-1776	
HIST 346	The American Revolutionary Era, 1763-1800	
HIST 376/ AFAM 392	Caribbean History to 1838	
HIST 383/ AFAM 389	History of Southern Africa	
Approved electives		
Select nine credits from the core lists above or from the following:		9
ARTH 425		
ARTH 439	Studies in 20th-century Art	
ENGL 203	British Literature I	
ENGL 204	British Literature II	
ENGL 321	English Drama From 900 to 1642	

ENGL 322	Medieval Literature: Old English to Middle English
ENGL 325	Early Modern Literature
ENGL 330	Restoration and 18th-century Drama
ENGL 331	Restoration and 18th-century British Literature
ENGL 332	18th-century British Novels and Narratives
ENGL 335	British Literature of the Romantic Era
ENGL 336	19th-century British Novels and Narratives
ENGL 337	Victorian Poetry
ENGL 340	Early 20th-century British Literature
ENGL 410	Medieval Studies: ____
ENGL 411	Early Modern Studies: ____
ENGL 499	Senior Seminar in English (as appropriate)
HIST 389	History in Film: ____ (as appropriate)
HIST 391	Topics in History (as appropriate)
HIST 490	Seminar in History (as appropriate)
HONR 399	Honors Module (as appropriate)
PHIL 104	Modern Western Philosophy
RELS 362	Shakespeare and Religion
THEA 491	Topics in Theatre (as appropriate)
Total Hours 18	

Creative writing, minor in

The minor in creative writing consists of 18 credits, including the courses below. In order to complete the minor in creative writing, students must take at least 15 credits (five classes) in courses offered by the Department of English.

Course	Title	Hours
Select at least 15 credits from the following: ¹		15-18
ENGL 295	The Reading and Writing of Fiction and Poetry	
ENGL 303	Writing for Stage and/or Screen	
ENGL 305	Writing Poetry	
ENGL 307	Writing Fiction	
ENGL 309	Writing Creative Nonfiction	
ENGL 433/ THEA 426	Advanced Dramatic Writing	
ENGL 435	Advanced Poetry Writing	
ENGL 437	Advanced Fiction Writing	
ENGL 439	Advanced Creative Nonfiction Writing	
ENGL 445	Form and Theory of Poetry	
ENGL 447	Form and Theory of Fiction	
ENGL 491	Topics in Writing	
Three credits may be taken from these other writing and writing-related courses:		0-3
ENGL/CRJS 302	Legal Writing	
ENGL 304	Persuasive Writing	
ENGL 310	Professional Writing	

ENGL 388	Professional, Scientific and Technical Writing
ENGL 493	English Internship
Total Hours	18

1

Note that some of these courses may be repeated (with different topics) for credit.

English, minor in

In order to complete the minor in English, students must take at least 15 credits (five classes) in courses offered by the Department of English. The minor in English consists of 18 credits in English literature, literary criticism and/or linguistics courses. No more than six credits may be taken at the 200 level. Note: Writing courses do not count toward the minor.

Course	Title	Hours
Select 18 credits from the following:		18
Literary contexts		
ENGL 201	Western World Literature I	
ENGL 202	Western World Literature II	
ENGL 203	British Literature I	
ENGL 204	British Literature II	
ENGL 205	American Literature I	
ENGL 206	American Literature II	
ENGL 211	Contemporary World Literature	
ENGL 236	Women in Literature	
ENGL 291	Topics in Literature	
Literature		
ENGL 320	Early Literary Traditions	
ENGL 321	English Drama From 900 to 1642	
ENGL 322	Medieval Literature: Old English to Middle English	
ENGL 324	Late Medieval Literature	
ENGL 325	Early Modern Literature	
ENGL 326	Shakespeare in Context	
ENGL 330	Restoration and 18th-century Drama	
ENGL 331	Restoration and 18th-century British Literature	
ENGL 332	18th-century British Novels and Narratives	
ENGL 335	British Literature of the Romantic Era	
ENGL 336	19th-century British Novels and Narratives	
ENGL 337	Victorian Poetry	
ENGL 340	Early 20th-century British Literature	
ENGL 341	British Literature and Culture After 1945	
ENGL 342	The Modern Novel	
ENGL 343	Modern Poetry	
ENGL 344	Modern Drama	
ENGL 345	Contemporary Poetry	
ENGL 347	Contemporary Literature	
ENGL 353	Women Writers	

ENGL 354	Queer Literature: ____
ENGL 355	African-American Women Writers
ENGL 361	The Bible as Literature
ENGL 363	African Literature
ENGL 364	Mythology and Folklore
ENGL 365	Caribbean Literature
ENGL 369	Illness Narratives
ENGL 371	American Literary Beginnings
ENGL 372	U.S. Literature: 1820-1865
ENGL 373	U.S. Literature: 1865-1913
ENGL 374	U.S. Literature: Modernism
ENGL 375	U.S. Literature After 1945
ENGL 377	19th-century U.S. Novels and Narratives
ENGL 378	20th-century U.S. Novels and Narratives
ENGL 379	African-American Literature: Beginnings Through the Harlem Renaissance
ENGL 380	Southern Literature
ENGL 381	Multiethnic Literature
ENGL 382	African-American Literature: Realism to the Present
ENGL 385	Fiction into Film
ENGL 391	Topics in Literature
ENGL 401	Shakespeare
ENGL 402	Chaucer
ENGL 403	Milton
ENGL 407	Medieval Epic and Romance
ENGL 410	Medieval Studies: ____
ENGL 411	Early Modern Studies: ____
ENGL 412	18th-century Studies: ____
ENGL 413	19th-century Studies: ____
ENGL 414	20th-century Studies: ____
ENGL 480	Authors: ____
ENGL 481	Genres: ____
ENGL 482	Literary Topics: ____
ENGL 483	Literary Texts and Contexts: ____
ENGL 484	Literary Movements: ____
ENGL 492	Independent Study (up to three credits)
Criticism	
ENGL 311	Introduction to Literary Theory
ENGL/GSWS 352	Feminist Literary Theory
ENGL 445	Form and Theory of Poetry
ENGL 447	Form and Theory of Fiction
ENGL 449	Form and Theory of Creative Nonfiction
ENGL 485	Literary Theory and Criticism: ____
Linguistics	
ENGL 390	Introduction to Linguistics
ENGL 392	Language, Culture and Cognition
ENGL 450	Modern Grammar
ENGL 451	History of the English Language
ENGL 452	Language and Gender
ENGL 453	Modern Rhetoric
ENGL 454	Cross-cultural Communication

Foreign language in translation¹

FLET 321	Early German Literature
FLET 322	Modern German Literature
FLET 391	Topics in Foreign Literature in English Translation

Total Hours **18**

¹

A maximum of three credits may be taken in the noted FLET courses.

English majors may not minor in English.

Professional writing and editing, minor in

The minor in professional writing and editing comprises 18 hours in writing courses. No more than six credits can be in creative writing; six credits may be taken in internship courses. Students may choose from the following professional writing and editing courses.

Course	Title	Hours
ENGL 302	Legal Writing	3
ENGL 304	Persuasive Writing	3
ENGL 310	Professional Writing	3
ENGL 350	Digital Rhetoric	3
ENGL 367	Writing Process and Practice	3
ENGL 388	Professional, Scientific and Technical Writing	3
ENGL 389	The Teaching of Writing Skills	3
ENGL 393	Rhetoric in Public Life	3
ENGL 394	Topics in Professional Writing	3
ENGL 453	Modern Rhetoric	3
ENGL 487	Scholarly Editing	3
ENGL 489	Literary Editing and Publishing	3
ENGL 491	Topics in Writing	3
ENGL 493	English Internship	1-3
ENGL 494	Blackbird Editorial Internship	1-3
ENGL 495	Social Media Internship	1-3

Department of Forensic Science

Tracey Dawson Green, Ph.D.

Professor and chair

Catherine Connon, Ph.D.

Assistant professor and undergraduate program director

Sarah Williams, Ph.D.

Associate professor and graduate program director

forensicscience.vcu.edu (<http://forensicscience.vcu.edu/>)

The Department of Forensic Science offers programs leading to bachelor's and master's degrees.

The Bachelor of Science is for students who plan a career or graduate study in the forensic sciences. The forensic science program provides students with fundamental learning in forensic laboratory analyses and crime scene investigation, with academic emphasis in biology, chemistry and criminal justice. The program offers three concentrations: forensic

biology, forensic chemistry and physical evidence. Students will select one of the three concentrations prior to the second semester of their sophomore year. The B.S. in Forensic Science supplies students with the necessary skills for professional careers in forensic laboratories, public and private, basic research laboratories, clinical laboratories, and/or to pursue graduate studies. Students also will be prepared to pursue advanced degrees in the physical sciences, biological sciences, forensic science, law, allied health and medicine, to name a few.

The Master of Science in Forensic Science prepares students for careers as forensic scientists in government and private laboratories. Students receive in-depth exposure to specializations within the field, including drug analysis, DNA analysis, trace evidence, criminalistics and legal issues.

For more information visit the departmental website (<http://forensicscience.vcu.edu/>).

- Forensic Science, Bachelor of Science (B.S.) with a concentration in:
 - Forensic biology (p. 197)
 - Forensic chemistry (p. 200)
 - Physical evidence (p. 202)

Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic biology

The forensic biology concentration requires an additional 24 credits in biology, forensic science and elective credits beyond the core requirements and is well-suited for students interested in graduate study or careers in the forensic biology section of forensic laboratories. Students also will be prepared for work in molecular biology laboratories in both the public and private sectors. Students completing the forensic biology concentration will be eligible for a minor in chemistry. Additionally, students who complete BIOL 317 or BIOL 318 will be eligible for a minor in biology.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist
- Be able to apply basic principles and laboratory procedures of biology to forensic science
- Demonstrate capabilities, use and limitations of forensic laboratory techniques

Special requirements

The forensic science program requires a minimum of 120 credits including completion of the general education requirements (see more information below), 34 forensic science core program credits and 24 concentration-specific credits.

For the forensic biology concentration, a minimum of five elective credit hours of advanced biology, chemistry and/or forensic science course work (with lab, at the 300- to 500-level) must be taken.

All of the general education foundation courses will be automatically fulfilled through this degree by taking the following required courses: UNIV 111, UNIV 112, UNIV 200 and MATH 200 (13 credits).

Students will need to take a total of 17 credits from areas of inquiry (including nine credits from breadth of knowledge). Some of these general education areas of inquiry and breadth of knowledge requirements will also be automatically fulfilled through this degree by taking the following required courses: CHEM 101 and CHEZ 101 (four credits) both satisfy breadth of knowledge for natural sciences and area of inquiry for scientific and logical reasoning; and either PHYS 201 or 207 (four to five credits) satisfies area of inquiry for scientific and logical reasoning.

In addition to these required courses, students will need to select at least three additional general education courses from the remaining areas of inquiry. Three credits are required from each of the following areas of inquiry (nine credits total): diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a forensic biology concentration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements ¹		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 490	Professional Practices in Forensic Science	3
• Additional major requirements ¹		
FRSC electives (any 300-500 level course)		6
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5

• Concentration requirements ¹		
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOZ 476	Molecular Capstone Laboratory	2
CHEM 403	Biochemistry I	3
FRSC 385	Forensic Serology	3
FRSC/BIOL 438	Forensic Molecular Biology	3
FRSZ/BIOL 438	Forensic Molecular Biology Laboratory	2
Concentration electives ¹		
Select five credits from 300- to 500-level courses with a laboratory from BIOL/BIOZ, CHEM/CHEZ or these FRSC/FRSZ courses:		5
FRSC 400	Forensic Chemistry	
FRSC 445	Forensic Toxicology and Drugs	
FRSC 505	Forensic Entomology	
FRSC 510	Developmental Osteology	
FRSC 515	Forensic Anthropology Applications	

Ancillary requirements

BIOL 151	Introduction to Biological Sciences I ¹	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
PHYS 201 or PHYS 207	General Physics I (either satisfies general education AOI for scientific and logical reasoning) ¹ or University Physics I	4-5
STAT 210	Basic Practice of Statistics	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		4-14
Total Hours		120

¹

Students must receive a minimum grade of C in these courses, including concentration electives. If a course is a prerequisite for another course, a minimum grade of C must be obtained in the prerequisite course before proceeding to the subsequent course.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Note: This plan of study assumes that the student:

- Scored well enough on the VCU Mathematics Placement Test to place into MATH 200 or that the student has completed MATH 151 with a minimum grade of C (a pre- or corequisite for BIOL 151, BIOZ 151 and CHEM 101; a prerequisite for CHEM 102).
- Scored well enough on the chemistry placement exam/assessment or has successfully completed CHEM 100 with a minimum grade of B (a prerequisite for CHEM 101).

Freshman year**Fall semester**

		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I ¹ and Introduction to Biological Science Laboratory I ¹	4
CHEM 101 & CHEZ 101	General Chemistry I ¹ and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) ¹	3
Play course video for Focused Inquiry I		
General education course ²		3
Term Hours:		14

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry II ¹ and General Chemistry Laboratory II ¹	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) ¹	3
Play course video for Focused Inquiry II		
Term Hours:		16

Sophomore year**Fall semester**

BIOL 300	Cellular and Molecular Biology	3
CHEM 301 & CHEZ 301	Organic Chemistry ¹ and Organic Chemistry Laboratory I ¹	5
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations) ¹	3
Experiential fine arts		1-3
Term Hours:		15-17

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3

FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
General education course ²		3

Term Hours: 14**Junior year****Fall semester**

BIOL 310	Genetics	3
FRSC 309	Scientific Crime Scene Investigation	3
PHYS 201 or PHYS 207	General Physics I (either satisfies general education AOI for scientific and logical reasoning) or University Physics I	4-5
Foreign language 101 (or open elective)		3
General education course ²		3

Term Hours: 16-17**Spring semester**

BIOZ 476	Molecular Capstone Laboratory	2
FRSC 365	Forensic Microscopy	3
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
Foreign language 102 (or open elective)		3
Open elective		2

Term Hours: 14-15**Senior year****Fall semester**

CHEM 403	Biochemistry I	3
FRSC 385	Forensic Serology	3
FRSC 490	Professional Practices in Forensic Science	3
BIOL/BIOZ, CHEM/CHEZ or FRSC/FRSZ (with lab, 300- to 500-level)		3
FRSC elective		3

Term Hours: 15**Spring semester**

FRSC 438 & FRSZ 438	Forensic Molecular Biology and Forensic Molecular Biology Laboratory	5
BIOL/BIOZ, CHEM/CHEZ or FRSC/FRSZ (with lab, 300- to 500-level)		2
FRSC elective		3
Open electives		6

Term Hours: 16**Total Hours: 120-124**

1

There is little, if any, flexibility regarding when to take these courses in order to enroll in FRSC 300 during spring semester of sophomore year.

2

At least three additional general education courses are required. Three credits are required from the areas of inquiry for diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

The minimum number of credit hours required for this degree is 120.

Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic chemistry

The forensic chemistry concentration requires an additional 27-28 credits in chemistry, calculus, forensic science and elective credits beyond the core requirements and is well-suited for students interested in graduate study or careers in the chemical analysis of forensic evidence, including the areas of drug analysis, toxicology and trace evidence analysis. Students also will be prepared for work in private analytical laboratories. Students completing the forensic chemistry concentration will be eligible for a minor in chemistry.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist
- Be able to apply basic principles and laboratory procedures of chemistry to forensic science
- Demonstrate capabilities, use and limitations of forensic laboratory techniques

Special requirements

The forensic science program requires a minimum of 120 credits including completion of the general education requirements (see more information below), 34 forensic science core program credits and 27-28 concentration-specific credits.

All of the general education foundation courses will be automatically fulfilled through this degree by taking the following required courses: UNIV 111, UNIV 112, UNIV 200 and MATH 200 (13 credits).

Students will need to take a total of 17 credits from areas of inquiry (including nine credits from breadth of knowledge). Some of these general education areas of inquiry and breadth of knowledge requirements will also be automatically fulfilled through this degree by taking the following required courses: CHEM 101 and CHEZ 101 (four credits) both satisfy breadth of knowledge for natural sciences and area of inquiry for scientific and logical reasoning; and either PHYS 201 or 207 (four to five credits) satisfies area of inquiry for scientific and logical reasoning.

In addition to these required courses, students will need to select at least three additional general education courses from the remaining areas of inquiry. Three credits are required from each of the following areas of inquiry (nine credits total): diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a forensic chemistry concentration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements ¹		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 490	Professional Practices in Forensic Science	3
• Additional major requirements ¹		
FRSC electives (any 300-500 level course)		6
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
• Concentration requirements ¹		
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 313 or CHEM 314	Physical Chemistry I ² or Physical Chemistry I with Math Modules	3-4
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
CHEZ 313	Physical Chemistry Laboratory I	2
FRSC 400	Forensic Chemistry	4
FRSC 445	Forensic Toxicology and Drugs	4
MATH 201	Calculus with Analytic Geometry II	4
Ancillary requirements		
BIOL 151	Introduction to Biological Sciences I ¹	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4

PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4-5
or PHYS 207	University Physics I	
STAT 210	Basic Practice of Statistics	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		0-11
Total Hours		120

1

Students must receive a minimum grade of C in these courses. If a course is a prerequisite for another course, a minimum grade of C must be obtained in the prerequisite course before proceeding to the subsequent course.

2

Students may take CHEM 313 if they have completed MATH 307 with a minimum grade of C.

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Note: This plan of study assumes that the student:

- Scored well enough on the VCU Mathematics Placement Test to place into MATH 200 or that the student has completed MATH 151 with a minimum grade of C (a pre- or corequisite for BIOL 151, BIOZ 151 and CHEM 101; a prerequisite for CHEM 102).
- Scored well enough on the chemistry placement exam/assessment or has successfully completed CHEM 100 with a minimum grade of B (a prerequisite for CHEM 101).

Freshman year

Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I ¹ and Introduction to Biological Science Laboratory I ¹	4
CHEM 101 & CHEZ 101	General Chemistry I ^{1,2} and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ^{1,2}	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ²	4

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) ¹	3
Play course video for Focused Inquiry I		

Term Hours: 15

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry II ^{1,2} and General Chemistry Laboratory II ^{1,2}	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II ²	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) ¹	3
Play course video for Focused Inquiry II		

Term Hours: 16

Sophomore year

Fall semester

CHEM 301 & CHEZ 301	Organic Chemistry ^{1,2} and Organic Chemistry Laboratory I ^{1,2}	5
CHEM 309 & CHEZ 309	Quantitative Analysis ² and Quantitative Analysis Laboratory ²	5
PHYS 201 or PHYS 207	General Physics I (either satisfies general education AOI for scientific and logical reasoning) ² or University Physics I ²	4-5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations) ¹	3

Term Hours: 17-18

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry ² and Organic Chemistry Laboratory II ²	5
FRSC 300	Survey of Forensic Science	3
PHYS 202 or PHYS 208	General Physics II ² or University Physics II ²	4-5
STAT 210	Basic Practice of Statistics	3

Term Hours: 15-16

Junior year

Fall semester

CHEM 313 or CHEM 314	Physical Chemistry I ² or Physical Chemistry I with Math Modules ²	3-4
CHEZ 313	Physical Chemistry Laboratory I ²	2
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
Foreign language 101 (or open elective)		3
FRSC elective		3

Term Hours: 14-15

Spring semester

CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
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FRSC 365	Forensic Microscopy	3
Foreign language 102 (or open elective)		3
General education course ³		3
Term Hours:		14
Senior year		
Fall semester		
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 445	Forensic Toxicology and Drugs	4
FRSC 490	Professional Practices in Forensic Science	3
Experiential fine arts		1-3
FRSC elective		3
Term Hours:		14-16
Spring semester		
FRSC 400	Forensic Chemistry	4
General education course ³		3
General education course ³		3
Open electives		5
Term Hours:		15
Total Hours:		120-125

1

There is little, if any, flexibility regarding when to take these courses in order to enroll in FRSC 300 during spring semester of sophomore year.

2

There is little, if any, flexibility regarding when to take these courses in order to enroll in CHEM 409 and CHEZ 409 during spring semester of junior year. CHEM 409 and CHEZ 409 are required prerequisites for FRSC 400.

3

At least three additional general education courses are required. Three credits are required from the areas of inquiry for diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

The minimum number of credit hours required for this degree is 120.

Forensic Science, Bachelor of Science (B.S.) with a concentration in physical evidence

The physical evidence concentration requires an additional 24 credits in chemistry, forensic science and elective credits beyond the core requirements and is well-suited for students interested in graduate study or careers in latent fingerprint examination and the analysis of impression evidence, as well as firearm and toolmark analyses. Students also will be prepared for work in private analytical laboratories. Students completing the forensic chemistry concentration will be eligible for a minor in chemistry.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist
- Be able to apply basic principles and laboratory procedures of physics and chemistry to forensic science
- Demonstrate capabilities, use and limitations of forensic laboratory techniques

Special requirements

The forensic science program requires a minimum of 120 credits including completion of the general education requirements (see more information below), 34 forensic science core program credits and 24 concentration-specific credits.

For the physical evidence concentration, a minimum of four elective credit hours of advanced biology, chemistry and/or forensic science course work (300- to 500-level) must be taken.

All of the general education foundation courses will be automatically fulfilled through this degree by taking the following required courses: UNIV 111, UNIV 112, UNIV 200 and MATH 200 (13 credits).

Students will need to take a total of 17 credits from areas of inquiry (including nine credits from breadth of knowledge). Some of these general education areas of inquiry and breadth of knowledge requirements will also be automatically fulfilled through this degree by taking the following required courses: CHEM 101 and CHEZ 101 (four credits) both satisfy breadth of knowledge for natural sciences and area of inquiry for scientific and logical reasoning; and either PHYS 201 or 207 (four to five credits) satisfies area of inquiry for scientific and logical reasoning.

In addition to these required courses, students will need to select at least three additional general education courses from the remaining areas of inquiry. Three credits are required from each of the following areas of inquiry (nine credits total): diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a physical evidence concentration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements ¹		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4

BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 490	Professional Practices in Forensic Science	3
• Additional major requirements ¹		
FRSC electives (any 300-500 level course)		6
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
• Concentration requirements ¹		
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM 320	Inorganic Chemistry I	3
FRSC 385	Forensic Serology	3
FRSC 410	Forensic Pattern Evidence	3
FRSC 412	Forensic Analysis of Firearms and Toolmarks	3
FRSC 566	Advanced Crime Scene Investigation	3
Concentration electives ¹		
Select four credits from 300- to 500-level BIOL/BIOZ, CHEM/CHEZ or these FRSC/FRSZ courses: ¹		4
FRSC 310	Forensic Anthropology	
FRSC 325	Forensic Medicine	
FRSC 391	Topics in Forensic Science	
FRSC 400	Forensic Chemistry	
FRSC 438	Forensic Molecular Biology	
FRSZ 438	Forensic Molecular Biology Laboratory	
FRSC 445	Forensic Toxicology and Drugs	
FRSC 505	Forensic Entomology	
FRSC 510	Developmental Osteology	
FRSC 515	Forensic Anthropology Applications	
FRSC 591	Topics in Forensic Science	
Ancillary requirements		
BIOL 151	Introduction to Biological Sciences I ¹	3
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4

PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4-5
or PHYS 207	University Physics I	
STAT 210	Basic Practice of Statistics	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		4-14
Total Hours		120

¹

Students must receive a minimum grade of C in these courses, including concentration electives. If a course is a prerequisite for another course, a minimum grade of C must be obtained in the prerequisite course before proceeding to the subsequent course.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Note: This plan of study assumes that the student:

- Scored well enough on the VCU Mathematics Placement Test to place into MATH 200 or that student has completed MATH 151 with a minimum grade of C (a pre- or corequisite for BIOL 151, BIOZ 151 and CHEM 101; a prerequisite for CHEM 102).
- Scored well enough on the chemistry placement exam/assessment or has successfully completed CHEM 100 with a minimum grade of B (a prerequisite for CHEM 101).

Freshman year

Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I ¹ and Introduction to Biological Science Laboratory I ¹	4
CHEM 101 & CHEZ 101	General Chemistry I ¹ and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	4
UNIV 111 Play course	Focused Inquiry I (satisfies general education UNIV foundations) ¹	3
	Focused Inquiry I	
	General education course ²	3
Term Hours:		14
Spring semester		

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry II ¹ and General Chemistry Laboratory II ¹	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations) ¹	3

Term Hours: 16

Sophomore year

Fall semester

CHEM 301 & CHEZ 301	Organic Chemistry ¹ and Organic Chemistry Laboratory I ¹	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations) ¹	3

Term Hours: 16

Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
Experiential fine arts		1-3
General education course ²		3

Term Hours: 15-17

Junior year

Fall semester

FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	3
PHYS 201 or PHYS 207	General Physics I (either satisfies general education AOI for scientific and logical reasoning) or University Physics I	4-5
Foreign language 101 (or open elective)		3
General education course ²		3

Term Hours: 16-17

Spring semester

FRSC 385	Forensic Serology	3
FRSC 412	Forensic Analysis of Firearms and Toolmarks	3
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
Foreign language 102 (or open elective)		3
Open elective		1

Term Hours: 14-15

Senior year

Fall semester

CHEM 320	Inorganic Chemistry I	3
FRSC 410	Forensic Pattern Evidence	3
FRSC 490	Professional Practices in Forensic Science	3
FRSC elective		3
Open elective		3

Term Hours: 15

Spring semester

FRSC 566	Advanced Crime Scene Investigation	3
Concentration electives		4
FRSC elective		3
Open elective		4

Term Hours: 14

Total Hours: 120-124

¹

There is little, if any, flexibility regarding when to take these courses in order to enroll in FRSC 300 during spring semester of sophomore year.

²

At least three additional general education courses are required. Three credits are required from the areas of inquiry for diversities in the human experience; creativity, innovation and aesthetic inquiry; and global perspectives. Two of the selected general education courses should also fulfill the breadth of knowledge requirement from the areas of humanities/fine arts and social/behavioral sciences.

The minimum number of credit hours required for this degree is 120.

Department of Gender, Sexuality and Women's Studies

Kathleen Ingram, Ph.D.

Associate professor and chair

Elizabeth Canfield, Ph.D.

Associate professor, associate chair and graduate program director

Levi Walter

Administrative coordinator

gsws.vcu.edu (<http://gsws.vcu.edu/>)

The Department of Gender, Sexuality and Women's Studies is committed to social transformation. Representing a wide range of disciplines, faculty in the department produce and disseminate interdisciplinary feminist knowledge and theories, and view them as vitally connected to community engagement and activism. The department encourages students to understand gender and sexuality as inextricably bound to other forms of difference and to examine how the construction of difference produces and reinforces social, cultural, economic and political inequities.

Students in the department are introduced to new analytical, theoretical and creative frameworks to enable them to understand, critique and transform themselves and the world around them. Through teaching, activism, scholarly and creative production and community engagement,

the department provides analytical and critical tools to equip students for careers in a broad range of fields.

The department offers a Bachelor of Arts in Gender, Sexuality and Women's Studies, as well as the option to complete the B.A. with a concentration in health, society and social justice. In addition, the department offers a minor in gender, sexuality and women's studies and serves as the administrative home for the interdisciplinary minor in LGBT + and queer studies. At the graduate level, the department offers a post-baccalaureate graduate Certificate in Gender, Sexuality and Women's Studies.

- Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) (p. 205)
- Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health, society and social justice (p. 207)
- Gender, sexuality and women's studies, minor in (p. 209)
- LGBT+ and queer studies, minor in (p. 209)

Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.)

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will demonstrate strong critical thinking skills that connect theory to action.
- Students will employ multiple theories informed by intersectionality.
- Students will demonstrate critical engagement with multiple epistemologies and methods of research.
- Students will articulate the ways diverse feminisms converge and diverge in the 21st century.
- Students will articulate contexts for intellectual, academic and artistic activism.

Special requirements

A Bachelor of Arts in Gender, Sexuality and Women's Studies requires a total of 120 credits with 30 credits in GSWS courses and at least 15 of those credits in upper-level courses. Students may choose a general interdisciplinary program or a health and science concentration.

All students must complete the requirements for the Bachelor of Arts in the College of Humanities and Sciences. All students also must complete core course requirements of GSWS 301 and GSWS 401, in addition to the ancillary requirement of GSWS 201.

The general interdisciplinary program requires that students take at least one course in each of the following thematic areas: race, racism and antiracism; art, media, culture and creative expression; methods of social transformation; and systems of power. The remaining credits in the major are electives, but must be GSWS courses or courses crosslisted with GSWS. These electives may include GSWS 391, GSWS 492 and GSWS 493. Note, however, that an independent study or internship is permitted only after the student has an agreement with a supervising faculty member and permission from the major's adviser.

Degree requirements for Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
GSWS 301	Feminist Theory	3
GSWS 401	Topical Senior Seminar	3
• Additional major requirements		
GSWS art, media, culture and creative expression course (200- to 400-level)		3
GSWS methods of social transformation course (200-to 400-level)		3
GSWS race, racism and anti-racism course (200- to 400-level)		3
GSWS systems of power course (200- to 400-level)		3
• Major electives		
GSWS electives (three of four courses must be upper-level)		12
Ancillary requirements		
GSWS 201	Introduction to Gender, Sexuality and Women's Studies (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

¹

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Perspective areas

Note: A course listed in two different areas may not be used to fulfill both area requirements for the major. Some courses may have prerequisites to meet before enrollment.

Course	Title	Hours
Race, racism and anti-racism		
GSWS 291	Topics in Women's Studies (if topics deal with race, racism and/or anti-racism)	3
GSWS/AFAM/SOCY 305	African American Family in Social Context	3
GSWS 309	Gender and Global Health	3
GSWS/AFAM/POLI 318	Politics of Race, Class and Gender	3
GSWS/POLI 319	Women and American Politics	3
GSWS 356	Open Minds	3

GSWS 359/ENGL 355	Black Women Writers	3	GSWS 450	Black Feminist Thought	3
GSWS 360	Mujerista Ethics	3	GSWS/ENGL 451	Narratives of Asian American Sexualities	3
GSWS 361	Decolonial Feminisms	3	GSWS/ENGL/LING 452	Language and Gender	3
GSWS/POLI 366	Women and Global Politics	3	GSWS 457	Women, Art and Society	3
GSWS/RELS 371	Women in Islam	3	GSWS 460	Gender, Sexuality and HIV In African Literature	3
GSWS/RELS 372	Global Women's Spirituality	3	GSWS/ENGL 461	HIV, Memory and Queer Archives	3
GSWS/CRJS 382	Gender, Crime and Justice	3	GSWS 470	Latinx Feminisms	3
GSWS 383	Beyoncé: Music, Race and Fame	3	GSWS 491	Topics in Women's Studies (when the topic relates to art, media, culture and creative expression)	3
GSWS 384	Queer Nightlife	3	Methods of social transformation		
GSWS/AFAM/HIST 390	Forced and Coerced Labor in Africa and the Americas	3	GSWS 202	Introduction to Trans Studies	3
GSWS 391	Topics in Gender, Sexuality and Women's Studies (if the topic deals with race, racism and/or anti-racism)	3	GSWS 205	Introduction to LGBT+ and Queer Studies	3
GSWS/DANC 415	Black Performance Theory	3	GSWS 291	Topics in Women's Studies (when the topic is focused on methodology, research and/or activism)	3
GSWS 450	Black Feminist Thought	3	GSWS 302	Trans Theory and Activism	3
GSWS/ENGL 451	Narratives of Asian American Sexualities	3	GSWS 356	Open Minds	3
GSWS 460	Gender, Sexuality and HIV In African Literature	3	GSWS 358	Sex and Power	3
GSWS 470	Latinx Feminisms	3	GSWS 391	Topics in Gender, Sexuality and Women's Studies (when the topic is focused on methodology, research and/or activism)	3
GSWS 491	Topics in Women's Studies (if the topic deals with race, racism and/or anti-racism)	3	GSWS 393	Topics in Feminist Method: ____	3
Art, media, culture and creative expression			GSWS 404	Activism Practicum Service-learning	3
GSWS/ENGL 236	Women in Literature	3	GSWS 405	Activism Practicum in Feminist and Queer Organizing	3
GSWS 291	Topics in Women's Studies (if the course deals with art, media and creative expression)	3	GSWS 450	Black Feminist Thought	3
GSWS 339/HIST 330		3	GSWS 491	Topics in Women's Studies (when the topic is focused on methodology, research and/or activism)	3
GSWS 340/HIST 331	History of Gender and Sexuality in Europe II	3	GSWS 492	Independent Study	1-6
GSWS 341/HIST 365	History of Gender and Sexuality in America I	3	GSWS 493	Internship	1-3
GSWS 342/HIST 366	History of Gender and Sexuality in America II	3	Systems of power		
GSWS/ENGL 352	Feminist Literary Theory	3	GSWS 202	Introduction to Trans Studies	3
GSWS/ENGL 353	Women's Writing	3	GSWS 205	Introduction to LGBT+ and Queer Studies	3
GSWS/ENGL 354	Queer Literature: ____	3	GSWS 291	Topics in Women's Studies (when the topic relates to a critique of systems of power)	3
GSWS 355	Queer Cinema	3	GSWS/SOCY 304	Sociology of Families	3
GSWS/ENGL 357	Queer Comics	3	GSWS/SOCY 305	African American Family in Social Context	3
GSWS 359/ENGL 355	Black Women Writers	3	GSWS 309	Gender and Global Health	3
GSWS 360	Mujerista Ethics	3	GSWS/POLI 316	Women and the Law	3
GSWS/HIST 369	Global LGBTQ+ History Since 1750	3	GSWS/POLI 318	Politics of Race, Class and Gender	3
GSWS/RELS 371	Women in Islam	3	or AFAM 318	Politics of Race, Class and Gender	
GSWS/RELS 372	Global Women's Spirituality	3	GSWS/POLI 319	Women and American Politics	3
GSWS/RELS 373	Gender and the Bible	3	GSWS/SOCY 333	Gender in Society	3
GSWS 380	Lesbian and Bisexual Women	3	GSWS/SOCY 334	Sociology of Women	3
GSWS 383	Beyoncé: Music, Race and Fame	3	GSWS/PSYC 335	Psychology of Women	3
GSWS 384	Queer Nightlife	3			
GSWS 391	Topics in Gender, Sexuality and Women's Studies (when the topic deals with art, media and creative expression)	3			
GSWS/DANC 415	Black Performance Theory	3			

GSWS/SOCY 336	Violence Against Women	3
GSWS 356	Open Minds	3
GSWS/POLI 366	Women and Global Politics	3
GSWS 380	Lesbian and Bisexual Women	3
GSWS/CRJS 382	Gender, Crime and Justice	3
GSWS 391	Topics in Gender, Sexuality and Women's Studies (when the topic relates to a critique of systems of power)	3
GSWS 392	Gender and Health Across the Life Span	3
GSWS 409	LGBTQ Health and Wellness	3
GSWS/PSYC 414	Psychology of Women's Health	3
GSWS 491	Topics in Women's Studies (when the topic relates to a critique of systems of power)	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University (or open elective)	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for global perspectives)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select quantitative foundations)		3
Term Hours:		16

Spring semester

GSWS 201	Introduction to Gender, Sexuality and Women's Studies (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		5
Term Hours:		15

Sophomore year

Fall semester		Hours
GSWS 301	Feminist Theory	3

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
GSWS	race, racism and anti-racism perspective (200-400 level)	3
Foreign language	(101-level)	3
General education course (select BOK to complete breadth of knowledge requirement)		3

Term Hours: 15

Spring semester

GSWS	art, media, culture and creative expression perspective (200- to 400-level)	3
GSWS	methods of social transformation perspective (200- to 400-level)	3
Experiential fine arts		1-3
Foreign language	(102-level)	3
Open elective		3

Term Hours: 13-15

Junior year

Fall semester

GSWS	systems of power perspective (200- to 400-level)	3
GSWS	elective (300- or 400-level)	3
Open electives		9

Term Hours: 15

Spring semester

GSWS	elective (300- to 400-level)	3
Open electives		12

Term Hours: 15

Senior year

Fall semester

GSWS 401	Topical Senior Seminar	3
Open electives		12

Term Hours: 15

Spring semester

GSWS	electives (upper-level)	6
Open electives		10

Term Hours: 16

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health, society and social justice

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will demonstrate strong critical thinking skills that connect theory to action.
- Students will employ multiple theories informed by intersectionality.

- Students will demonstrate critical engagement with multiple epistemologies and methods of research.
- Students will articulate the ways diverse feminisms converge and diverge in the 21st century.
- Students will articulate contexts for intellectual, academic and artistic activism.

Special requirements

A Bachelor of Arts in Gender, Sexuality and Women's Studies requires a total of 120 credits with 30 credits in GSWS courses and at least 15 of these credits in upper-level courses. Students may choose a general interdisciplinary program or a health, society and social justice concentration.

All students must complete the requirements for the Bachelor of Arts in the College of Humanities and Sciences. All students also must complete core course requirements of GSWS 301 and GSWS 401, with the ancillary requirement of GSWS 201.

Students in the health, society and social justice concentration must take GSWS 393, in addition to three credits from the race, racism and anti-racism area and 12 credits from the health, society and social justice perspectives area.

The remaining credits in the major are electives, but must be GSWS courses or courses in other departments that have been approved by the major's adviser. These electives may include GSWS 391, GSWS 491, GSWS 492 or GSWS 493. Note, however, that an independent study or internship is permitted only after the student has an agreement with a supervising faculty member and permission from the major's adviser.

Degree requirements Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health, society and social justice

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
GSWS 301	Feminist Theory	3
GSWS 401	Topical Senior Seminar	3
• Additional major requirements		
GSWS 393	Topics in Feminist Method: ____	3
GSWS race, racism and anti-racism perspective course		3
• Concentration requirements		
GSWS health, society and social justice perspective courses		12
• Major electives		
GSWS electives		6
Ancillary requirements		
GSWS 201	Introduction to Gender, Sexuality and Women's Studies (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3

HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

¹

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Perspective areas

Note: A course listed in two different areas may not be used to fulfill both area requirements for the major. Some courses may have prerequisites to meet before enrollment.

Course	Title	Hours
Race, racism and anti-racism		
GSWS 291	Topics in Women's Studies (when the topic deals with race, racism and anti-racism)	3
GSWS/AFAM/SOCY 305	African American Family in Social Context	3
GSWS 309	Gender and Global Health	3
GSWS/AFAM/POLI 318	Politics of Race, Class and Gender	3
GSWS/POLI 319	Women and American Politics	3
GSWS 356	Open Minds	3
GSWS 359/ENGL 355	Black Women Writers	3
GSWS 360	Mujerista Ethics	3
GSWS 361	Decolonial Feminisms	3
GSWS 366/INTL 368/ POLI 366	Women and Global Politics	3
GSWS/RELS 371	Women in Islam	3
GSWS 372	Global Women's Spirituality	3
GSWS/CRJS 382	Gender, Crime and Justice	3
GSWS 383	Beyoncé: Music, Race and Fame	3
GSWS 384	Queer Nightlife	3
GSWS/AFAM/HIST 390	Forced and Coerced Labor in Africa and the Americas	3
GSWS 391	Topics in Gender, Sexuality and Women's Studies (when the topic deals with race, racism and anti-racism)	3
GSWS 415	Black Performance Theory	3
GSWS 450	Black Feminist Thought	3
GSWS 451	Narratives of Asian American Sexualities	3
GSWS 460	Gender, Sexuality and HIV In African Literature	3
GSWS 470	Latinx Feminisms	3
GSWS 491	Topics in Women's Studies (when the topic deals with race, racism or anti-racism)	3

Health, society and social justice

GSWS/AFAM/ANTH/ INTL 309	Gender and Global Health	3
GSWS/SOCY 333	Gender in Society	3
GSWS/SOCY 334	Sociology of Women	3
GSWS/PSYC 335	Psychology of Women	3
GSWS/SOCY 336	Violence Against Women	3
GSWS 392	Gender and Health Across the Life Span	3
GSWS 409	LGBTQ Health and Wellness	3
GSWS/PSYC 414	Psychology of Women's Health	3
GSWS 460	Gender, Sexuality and HIV In African Literature	3
GSWS/ENGL 461	HIV, Memory and Queer Archives	3
GSWS 491	Topics in Women's Studies (when the topic deals with health, society and social justice)	3

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University (or open elective)	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for scientific and logical reasoning)	3
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for global perspectives)	3
	General education course (select quantitative foundations)	3
Term Hours:		16

Spring semester

GSWS 201	Introduction to Gender, Sexuality and Women's Studies (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	General education course (select BOK to complete breadth of knowledge requirement)	3
	Open electives	5
Term Hours:		15

Sophomore year

Fall semester		
GSWS 301	Feminist Theory	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	GSWS race, racism and anti-racism perspective	3

Foreign language (101-level)	3
General education course (select BOK to complete breadth of knowledge requirement)	3

Term Hours: 15**Spring semester**

Experiential fine arts	1-3
Foreign language (102-level)	3
GSWS health, society and social justice perspective	3
GSWS health, society and social justice perspective	3
Open electives	4

Term Hours: 14-16**Junior year****Fall semester**

GSWS 393	Topics in Feminist Method: ____	3
	GSWS health, society and social justice perspectives	3
	Open electives	9

Term Hours: 15**Spring semester**

	GSWS elective	3
	GSWS health, society and social justice perspective	3
	Open electives	9

Term Hours: 15**Senior year****Fall semester**

GSWS 401	Topical Senior Seminar	3
	GSWS elective	3
	Open electives	9

Term Hours: 15**Spring semester**

	Open electives	15
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Term Hours: 15**Total Hours: 120-122**

The minimum number of credit hours required for this degree is 120.

Gender, sexuality and women's studies, minor in

The minor in gender, sexuality and women's studies consists of 18 credits in GSWS courses or courses crosslisted with GSWS courses. Students are required to take the following:

Course	Title	Hours
GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
	GSWS elective on feminist theory	3
	GSWS elective on race, racism and anti-racism	3
	GSWS electives (may choose courses crosslisted with GSWS)	9
Total Hours		18

LGBT+ and queer studies, minor in

The minor in LGBT+ and queer studies requires 18 credits, at least nine of which must be upper level. Students must complete GSWS 205 and choose an additional five courses in the area of LGBT+ and queer studies.

Note that these electives cannot all come from the same discipline, but students may select relevant topics courses in consultation with an adviser for this minor. At least one of the electives must focus on race and/or ethnicity as they relate to LGBT+ and queer studies and one of the electives must focus outside the United States. Course requirements are distributed as follows:

Course	Title	Hours
GSWS 205	Introduction to LGBT+ and Queer Studies	3
Select one course on race and/or ethnicity as they relate to LGBT+ and queer studies ¹		3
Select one course that focuses on LGBT+ and queer studies outside the United States ¹		3
Select three courses in LGBT+ and queer studies electives ¹		9

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A list of recommended courses to fulfill distribution areas is available from the adviser for the minor.

Department of History

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Associate professor and chair

Peter Stone, Ph.D.

Assistant professor and assistant to the chair

Leigh Ann Craig, Ph.D.

Associate professor and director of undergraduate studies

Emilie Raymond, Ph.D.

Professor and director of graduate studies

Kathleen Murphy

Administrative coordinator

The Department of History offers programs at the graduate and undergraduate levels, specializing in a multidimensional analysis of the human past. Faculty research interests vary among thematic, topical, national or chronological emphases. For more information regarding the department and its specialty areas, visit their website (<http://history.vcu.edu/>).

- History, Bachelor of Arts (B.A.) (p. 210)
- History, minor in (p. 212)
- Medical humanities, minor in (p. 212)

History, Bachelor of Arts (B.A.)

The Bachelor of Arts in History requires a minimum of 120 credits, with at least 36 of those credits in history. Students must complete HIST 300 with a minimum grade of C prior to enrolling in more than six credits of 300- or 400-level history courses. Students in the program can take

advantage of a wide range of courses with thematic, topical, national or chronological emphases to fulfill requirements and electives. Students should consult with their advisers each semester to design a program that meets these requirements and suits their interests and career objectives.

The history curriculum exposes students to a multidimensional analysis of the human past. Faculty members seek to impart to students an awareness of the forces of change and continuity; good judgement as to the appropriateness (or inappropriateness) of analogies between one set of historical circumstances and another; an appreciation of the need for skepticism and informed judgment in historical studies; and an understanding of the role of biases and frames of reference in historical research. As such, the study of history not only has the intrinsic appeal of any disciplined intellectual inquiry, but also leads to personal and social awareness within the rich tradition of the liberal arts. The B.A. in History provides students an ideal preparation for a wide range of careers and further professional study, and it constitutes an indispensable basis for active citizenship.

Student learning outcomes

Upon completing this program, students will be able to demonstrate:

1. **Library and research skills.** Students should be able to locate information independently and evaluate its utility for their research purposes.
2. **Critical reading skills.** Students should be able to engage a wide variety of written texts and glean useful information from them.
3. **Critical thinking about sources of information.** Students should be able to evaluate the quality and utility of sources used to understand the past, keeping in mind their context and purpose.
4. **Critical thinking about logical inferences.** Students should be able to make useful connections among sources of information about history and be able to propose causal relationships based on discrete pieces of information.
5. **Formulation of persuasive analysis.** Students should be able to use both historical sources and logical inferences to make convincing arguments about the past.
6. **Writing skills.** Students should be able to write clearly, accurately, persuasively and elegantly about the past and to employ the research apparatus normative to historical writing.
7. **Other information presentation skills.** Students should be able to present information and arguments about the past in other formats, such as oral presentations, museum exhibits, archival guides, web-based presentations, etc.
8. **Interpersonal and project management skills.** Students should be able to carry out the stages of any project or assignment in an organized, proactive manner, showing independence, timeliness, professional ethics, problem-solving skills, teamwork and collaboration, integrative learning and the transfer of skills, self-assessment, and good judgment in seeking support or resources.

Degree requirements for History, Bachelor of Arts (B.A.)

Note: The history major requires at least six credits from each of three areas: a) Europe, b) United States and c) Africa, Asia, Latin America or the Middle East which may be satisfied by 100-level and 300-level HIST courses selected as major electives.

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
HIST 300	Introduction to Historical Study	3
• Additional major requirements		
HIST 490 or HIST 493	Seminar in History or Internship	3
• Major electives		
Historical survey courses (100-level HIST)		12
Upper-level HIST (301-499, except 490 or 493)		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		44-52
Total Hours		120

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Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select quantitative foundations)		3-4
Historical survey (100-level HIST)		3
Term Hours:		14-17
Spring semester		
HUMS 202	Choices in a Consumer Society	1

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) video for Focused Inquiry II	3
General education course (select AOI for diversities in the human experience)		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Historical survey (100-level HIST)		3
Term Hours:		16
Sophomore year		
Fall semester		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Historical survey (100-level HIST)		3
Open elective		3
Term Hours:		15
Spring semester		
HIST 300	Introduction to Historical Study (must achieve a minimum grade of C)	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Historical survey (100-level HIST)		3
Open elective		3
Term Hours:		15
Junior year		
Fall semester		
Open electives		9
Upper-level HIST (301-499)		6
Term Hours:		15
Spring semester		
Open electives		9
Upper-level HIST (301-499)		6
Term Hours:		15
Senior year		
Fall semester		
Open electives		9
Upper-level HIST (301-499)		6
Term Hours:		15
Spring semester		
HIST 490 or HIST 493	Seminar in History or Internship	3-4
Open electives		12
Term Hours:		15-16
Total Hours:		120-124

The minimum number of credit hours required for this degree is 120.

History, minor in

The minor in history consists of 18 credits in history, 12 of which must be at the upper level (300-400), including:

Course	Title	Hours
Select at least one three-credit course in three of the following regions:		9
Africa		
North America		
Asia		
Europe		
Latin America		
Middle East		
Select additional history courses		9
Total Hours		18

Medical humanities, minor in

Note: Admission to this program is temporarily suspended.

The minor in medical humanities consists of 18 credits in courses that address the nonscientific aspects of professional health care training. To achieve the minor, students must complete each of the following courses:

Course	Title	Hours
ARTH 361	The Human Condition: An Arts Perspective	3
PHIL 213	Ethics and Health Care	3
SCTS 301/ENGL 369	Illness Narratives	3
Core I: History of science, technology and medicine		
Select one of the following:		3
HIST 389	History in Film: ____ (science film topics only)	
HIST/SCTS 392	Revolutions in Science I	
HIST/SCTS 393	Revolutions in Science II	
HIST/SCTS 397	Genetics and Society: 1865 to the Present	
HIST/SCTS 398	History of Medicine and Public Health: ____	
SCTS 300	Introduction to Science and Technology Studies	
Core II: Cross-cultural and diversity perspectives that impact health care		
Select one of the following:		3
AFAM/ANTH/INTL/GSWS 309	Gender and Global Health	
AFAM 310	Black Health Matters: Social Determinants of Health in the African American Community	
ANTH 301/BIOL 341	Human Evolution	
ANTH 391	Topics in Anthropology (medical anthropology topic only)	
ENGL/GSWS 353	Women Writers	

ENGL/GSWS 354	Queer Literature: ____
GSWS 392	Women's Health Care Across the Life Span
WRLD 220	Human Rights and Literature

Core III: Psych-social dimensions of healing and caregiving

Select one of the following:	3
HCMG 300	Health Care Organization and Services
PSYC 304	Life Span Developmental Psychology
PSYC 308	Stress and its Management
PSYC 412	Health Psychology
SOCY/GSWS 333	Gender in Society

Total Hours **18**

Department of Kinesiology and Health Sciences

R. Lee Franco, Ph.D.

Associate professor and chair

khs.vcu.edu (<http://khs.vcu.edu/>)

The Department of Kinesiology and Health Sciences offers programs that prepare students to pursue careers that utilize exercise interventions for both healthy and diseased populations and/or careers designed for students who wish to enter a health care-related field (that does not require licensure, certification or registry status). The department offers one undergraduate degree program; the Bachelor of Science with either the exercise science concentration or the health science concentration.

Along with the undergraduate program, the department also offers a Master of Science in Health and Movement Sciences and Doctor of Philosophy in Rehabilitation and Movement Science.

The M.S. in Health and Movement Sciences program provides advanced course work for students interested in the application of health and movement science principles to exercise science, teaching and sports medicine. This program has a central focus on the sciences and is flexible enough so that students, with the assistance of an adviser, can design a program that truly meets their professional goals.

The Doctor of Philosophy in Rehabilitation and Movement Science program is interdisciplinary in nature and includes faculty from the departments of Kinesiology and Health Sciences, Physical Therapy, and Physical Medicine and Rehabilitation. Students choose a concentration in either exercise physiology or neuromusculoskeletal dynamics.

The department also offers a post-baccalaureate undergraduate Certificate in Health Sciences that is designed for students who hold a baccalaureate degree in a non-science area and wish to pursue their undergraduate pre-health sciences requirements at VCU.

For more information, consult the department's website (<http://khs.vcu.edu/>).

- Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science (p. 213)
- Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science (p. 216)
- Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate) (p. 218)

Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science

The exercise science concentration prepares students to serve as leaders of fitness, health and conditioning programs in corporate, commercial, university and clinical settings that provide exercise programming for apparently healthy individuals and those with chronic disease. Career paths include exercise physiologist, corporate fitness director, cardiopulmonary rehabilitation specialist, strength and conditioning specialist and wellness director. Additionally, the exercise science concentration prepares students for graduate study in exercise science or athletic training and offers an excellent option for those students who want to obtain the pre-requisites for post-graduate study in physical therapy, occupational therapy and medicine.

Student learning outcomes

- National standing in strength and conditioning: Students will demonstrate knowledge in optimal strength and conditioning assessments and programming for a variety of populations.
- National standing in exercise physiology: Students will apply knowledge and skills in exercise testing, prescription and program development for both healthy and medically appropriate populations.
- Effective communication: Students will demonstrate the ability to communicate effectively by giving an oral presentation in class.

Special requirements

A minimum grade of C is required in all HPEX courses and electives. Students cannot use more than one HPEX course (three credits) from the health science core as an elective. All students must attempt a department-approved national certification examination prior to graduation.

Degree requirements for Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
HPEX 300	Health Care Delivery in the U.S.	3
HPEX 310	Fitness and Health	3
HPEX 395	Clinical Experience I	3
HPEX 495	Clinical Experience II	6
• Concentration requirements		
HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375 & HPEX 375	Physiology of Exercise and Physiology of Exercise Laboratory	4

HPEX 380	Resistance Training for Health and Performance	3
HPEX 440	Chronic Disease and Exercise Management	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX 480	Professional Certification Seminar	1

Ancillary requirements

• Ancillary core		
BIOL 205	Basic Human Anatomy	4
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
HUMS 202	Choices in a Consumer Society	1
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
• Additional ancillary requirements		
MATH 151	Precalculus Mathematics (either satisfies general education quantitative foundations)	4
or MATH 200	Calculus with Analytic Geometry I	
Experiential fine arts ¹		1-3
Select a biology sequence.		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Foreign language through the 102 level (by course or placement)		0-6
Electives		
Select additional courses from the list below.		16-24
Total Hours		120

¹

Course offered by School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
ANTH 301	Human Evolution	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 201	Human Biology	3
BIOL 209	Medical Microbiology	3
BIOL 217	Principles of Nutrition	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
HPEX 250	Medical Terminology	1
HPEX 271	Safety, First Aid and CPR	3
HPEX: 300-level and 400-level courses		
HUMS 391	Special Topics in the Humanities and Sciences	1-4
PHIL 201	Introduction to Ethics	3
PHYS 202	General Physics II	4
PHIL 213	Ethics and Health Care	3
PHYS 208	University Physics II	5
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
SOCY 344	Medical Sociology	3
UNIV 101	Introduction to the University	1
Other adviser-approved courses		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 101	Introduction to the University	1
Foreign language 101		3

General education course (select AOI for creativity, innovation and aesthetic inquiry) 3

Term Hours: 14

Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
Foreign language 102		3

Term Hours: 15

Sophomore year

Fall semester

HPEX 300	Health Care Delivery in the U.S.	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK to complete breadth of knowledge requirement and AOI for global perspectives)		3
HPEX elective		3

Term Hours: 16

Spring semester

BIOL 205	Basic Human Anatomy	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
HPEX electives		5-6

Term Hours: 15-16

Junior year

Fall semester

HPEX 310	Fitness and Health	3
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
General education course (select for unfulfilled BOK and/or AOI) or HPEX elective		3

Term Hours: 14

Spring semester

CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1

HPEX 380	Resistance Training for Health and Performance	3
HPEX 395	Clinical Experience I	3
HPEX 440	Chronic Disease and Exercise Management	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
Term Hours:		16
Senior year		
Fall semester		
HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX elective		3
Term Hours:		15
Spring semester		
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Experiential fine arts		1-3
HPEX elective		3
Term Hours:		15-17
Total Hours:		120-123

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Health, Physical Education and Exercise Science with a concentration in exercise science and M.S. in Health and Movement Science in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have completed advanced course work focused on the application of health and movement science principles to exercise science, preparing graduates for a wide range of career options that promote physical well-being in healthy children and adults, athletes, and clinical populations. These career opportunities exist in health and fitness centers, sports programs, clinical settings, academic institutions, rehabilitation facilities and public health agencies, where graduates can pursue employment in community, corporate and university exercise programs, cardiac rehabilitation or advanced study and research in the field of exercise physiology.

Admission to the program

Minimum qualifications for admittance to the program include completion of 84 undergraduate credit hours including HPEX 375, HPEX 440 and undergraduate courses specific to the complementary graduate courses offered in the student's senior year (HPEX 350 prior to HEMS 604; HPEX 371 prior to HEMS 605; HPEX 441 prior to HEMS 610; HPEX 475 prior to HEMS 675); an overall minimum GPA of 3.0; and a GPA of 3.0 in ancillary requirements, HPEX core and exercise science

core course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than July 1 of that year. Three reference letters (at least two from a kinesiology and health science faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the graduate program director of the M.S. program before they have completed 84 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a minimum 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate health, physical education and exercise science adviser and the graduate program director of the master's program.

Degree requirements

The Bachelor of Science in Health, Physical Education and Exercise Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for required major electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate health and movement science courses that may be taken as an undergraduate, once a student is admitted to the program, are listed below.

Course	Title	Hours
HEMS 600	Introduction to Research Design in Health and Movement Sciences	3
HEMS 601	Movement Physiology	3
HEMS 604	Nutrition for Health and Physical Activity ¹	3
HEMS 605	Psychology of Physical Activity ¹	3
HEMS 610	Laboratory Techniques in Rehabilitation Science ¹	3
HEMS 675	Clinical Exercise Physiology ¹	3

¹

Offered biennially

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
HPEX 375 & HPEX 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
Ancillary requirements		8
Experiential fine arts		1
General education course		3
Term Hours:		16
Spring semester		
HPEX 350	Nutrition	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 395	Clinical Experience I	3
HPEX 440	Chronic Disease and Exercise Management	3
Term Hours:		13
Senior year		
Fall semester		
HEMS 601	Movement Physiology	3
HEMS 604	Nutrition for Health and Physical Activity	3
HPEX 371	Psychology of Physical Activity	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
Term Hours:		15
Spring semester		
HEMS 600	Introduction to Research Design in Health and Movement Sciences	3
HEMS 605	Psychology of Physical Activity	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Term Hours:		16
Fifth year		
Fall semester		
BIOS 543	Graduate Research Methods I	3
HEMS 675	Clinical Exercise Physiology	3
HEMS 692	Independent Study	1-3
General elective		3
Term Hours:		12
Spring semester		
HEMS 610	Laboratory Techniques in Rehabilitation Science	3
HEMS 695	Externship	1-6
General elective		3

Specified elective	3
Term Hours:	12

Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science

The health science concentration is designed for students who wish to enter a health care-related field (that does not require licensure, certification or registry status) such as corporate wellness, human services, nonprofit health promotion and medical and pharmaceutical sales. Graduates holding a degree with a concentration in health science can also be qualified to enter either graduate or professional health science programs, such as public health, health education and promotion, physical therapy, occupational therapy, pharmacy, nursing, speech-language pathology, audiology, radiation safety, clinical laboratory science and health care administration.

Student learning outcomes

- Analyzing data: Graduates will be able to analyze data from a variety of sources to assess individual community health topics.
- Solving health problems: Graduates will be able to solve complex health science issues and problems using interdisciplinary sciences.

Special requirements

A minimum grade of C is required in all HPEX core, health science core, clinical experiences and elective courses. Students cannot use more than one HPEX course (three credits) from the exercise science core as an elective.

Degree requirements for Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
HPEX 300	Health Care Delivery in the U.S.	3
HPEX 310	Fitness and Health	3
HPEX 395	Clinical Experience I	3
HPEX 495	Clinical Experience II	6
• Concentration requirements		
HPEX 250	Medical Terminology	1
HPEX 345	Nutrition for Health and Disease	3
HPEX 352	Substance Abuse	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 354	Coping and Adaptation	3
HPEX 357	Personal Health and Behavior Change	3
HPEX 358	Introduction to Epidemiology	3
HPEX 435	Health Disparities in the U.S.	3

HPEX 445	Principles of Health Care Management	3
Ancillary requirements		
• Ancillary core		
BIOL 205	Basic Human Anatomy	4
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
HUMS 202	Choices in a Consumer Society	1
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
• Additional ancillary requirements		
MATH 151	Precalculus Mathematics (either satisfies general education quantitative foundations)	4
or MATH 200	Calculus with Analytic Geometry I	
Experiential fine arts ¹		1-3
Select a biology sequence.		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Foreign language through the 102 level (by course or placement)		0-6
Electives		
Select additional courses from the list below.		21-29
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.**Electives**

Course	Title	Hours
ANTH 301	Human Evolution	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 201	Human Biology	3
BIOL 209	Medical Microbiology	3
BIOL 217	Principles of Nutrition	3

BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
HPEX 271	Safety, First Aid and CPR	3
HPEX: 300-level and 400-level courses		
HUMS 391	Special Topics in the Humanities and Sciences (health careers mentoring)	1-4
PHIL 201	Introduction to Ethics	3
PHIL 213	Ethics and Health Care	3
PHYS 202	General Physics II	4
PHYS 208	University Physics II	5
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
SOCY 344	Medical Sociology	3
UNIV 101	Introduction to the University	1

Other adviser-approved courses

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
HPEX 310	Fitness and Health	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Foreign language 101		3
Term Hours:		13
Spring semester		Hours
HUMS 202	Choices in a Consumer Society	1
MATH 151 or MATH 200	Precalculus Mathematics (either satisfies general education quantitative foundations) or Calculus with Analytic Geometry I	4
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
Play course video for Introduction to Psychology		

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
Term Hours:		15

Sophomore year**Fall semester**

HPEX 300	Health Care Delivery in the U.S.	3
HPEX 357	Personal Health and Behavior Change	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
HPEX elective (PHIL 201 recommended)		3
Term Hours:		16

Spring semester

BIOL 205	Basic Human Anatomy	4
HPEX 250	Medical Terminology	1
HPEX electives		5-6
General education course (select AOI for creativity, innovation and aesthetic inquiry)		
		3
General education course (select BOK to complete breadth of knowledge requirement and AOI for global perspectives)		
		3
Term Hours:		16-17

Junior year**Fall semester**

HPEX 353	Disease Trends, Prevention and Control	3
HPEX 354	Coping and Adaptation	3
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
STAT 210	Basic Practice of Statistics	3
Experiential fine arts		1-3
Term Hours:		14-16

Spring semester

CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
HPEX 358	Introduction to Epidemiology	3
HPEX 445	Principles of Health Care Management	3
PSYC 304	Life Span Developmental Psychology	3
HPEX elective		3
Term Hours:		16

Senior year**Fall semester**

HPEX 345	Nutrition for Health and Disease	3
HPEX 352	Substance Abuse	3
HPEX 395	Clinical Experience I	3
HPEX electives		6
Term Hours:		15

Spring semester

HPEX 435	Health Disparities in the U.S.	3
HPEX 495	Clinical Experience II	6
HPEX electives		6
Term Hours:		15
Total Hours:		120-123

The minimum number of credit hours required for this degree is 120.

Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate)

The post-baccalaureate undergraduate Certificate in Health Sciences is designed for students who hold a baccalaureate degree in a non-science area and wish to pursue their undergraduate pre-health sciences requirements at VCU. The program is intended for students who have few or none of the prerequisites they need to enter doctoral-level programs in physical therapy, pharmacy, dentistry, medicine, osteopathic medicine, optometry or veterinary sciences. This program challenges students to complete more intensive science and math course work than the basic prerequisites and maintain at least a 3.0 cumulative GPA. The certificate program assists students in becoming more competitive for admission into graduate-level programs in the health sciences, but it does not guarantee admission into any program.

Those students completing the certificate are expected to achieve competency in introductory and more advanced-level science courses and will be granted opportunities to gain health care experience. Students can learn about health care program admissions requirements and strengthen their credentials through advising, student-run club activities and seminars.

Depending on the types of courses students complete before entering the program, the certificate can take one to three years to complete with either full- or part-time study. Students are advised on how to progress based on prior math and science course work, work and family constraints, and other factors that could affect the time frame to completion. The certificate program requires the completion of minimal competencies and a core curriculum.

Before beginning the core curriculum, students must show minimum competency by completing or transferring in equivalent courses with minimum grades of B for the following:

Course	Title	Hours
MATH 151	Precalculus Mathematics	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4

Students must have completed all chemistry courses within five years of the time they begin the program in order to apply them toward the minimum competency requirement.

The academic requirements to complete the core portion of the program are as follows: a minimum of 25 credit hours (comprising at least six courses) in mathematics, statistics, chemistry, biology or physics. All program core courses must be at the 200 level or above. At least three of the courses in the core must have a laboratory.

A maximum of 11 credit hours can be transferred toward the core curriculum of the certificate program. Students must have earned a minimum grade of B in all course work accepted for transfer, which must come from an accredited institution. Students should consult with the pre-health sciences advisers to determine the most appropriate courses to meet their educational and career goals.

Courses will be selected from the following lists:

Course	Title	Hours
Math and statistics		
MATH 200	Calculus with Analytic Geometry I	4
STAT 210	Basic Practice of Statistics	3
STAT 314	Applications of Statistics	4
Biology		
BIOL 205	Basic Human Anatomy	4
BIOL 209 or BIOL 303	Medical Microbiology Microbiology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
BIOL 310 & BIOZ 310	Genetics and Laboratory in Genetics	5
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL/FRSC 438	Forensic Molecular Biology	3
BIOL 445	Neurobiology and Behavior	4
BIOL 455	Immunology	3
BIOL 524	Endocrinology	3
BIOL 530	Introduction to Human Genetics	3
BIOL 540	Fundamentals of Molecular Genetics	3
PHIS 206 or BIOL 411	Human Physiology Physiology	3
Chemistry		
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 305	Physical Chemistry for the Life Sciences	3
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 320	Inorganic Chemistry I	3
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
Physics		
PHYS 201	General Physics I (includes laboratory)	4

PHYS 202	General Physics II (includes laboratory)	4
PHYS 207	University Physics I (includes laboratory)	5
PHYS 208	University Physics II (includes laboratory)	5

The minimum total of credit hours required for this certificate is 25.

While matriculating all students must maintain a minimum cumulative GPA of 3.0. Courses may not be repeated after gaining admission into the certificate program. Failure to maintain the minimum GPA will result in formal dismissal from the certificate program.

Students accepted into the program must also commit to at least 50 hours of volunteer service in the VCU Medical Center Volunteer Program or a private health care setting. Volunteer hours must be documented and submitted to the Office of Pre-professional Health Advising at the time application is submitted for graduation.

Admission to the post-baccalaureate health sciences certificate program is based on students' academic achievement in their baccalaureate programs and whether the certificate program will help them achieve their professional goals. The program accepts students to start in the fall and spring semesters. Application deadlines are the same for transfer students applying to the university. The program is not offered to students pursuing entry into undergraduate- or master's-level health professions programs, nor is it open to those pursuing pre-health course work as part of their undergraduate concentrations at VCU.

Department of Mathematics and Applied Mathematics

Glenn Hurlbert, Ph.D.

Professor and chair

math.vcu.edu (<http://www.math.vcu.edu>)

The Department of Mathematics and Applied Mathematics offers an undergraduate program leading to a Bachelor of Science in Mathematical Sciences with concentrations in applied mathematics, biomathematics, mathematics and secondary mathematics teacher preparation. The department administers the Master of Science in Mathematical Sciences concentrations in applied mathematics or mathematics and is involved in administering the Doctor of Philosophy in Systems Modeling and Analysis. The curricula of these programs are run jointly with additional concentrations offered by the Department of Statistical Sciences and Operations Research.

- Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in:
 - Applied mathematics (p. 220)
 - Biomathematics (p. 223)
 - General mathematical sciences (p. 227)
 - Mathematics (p. 230)
 - Secondary teacher preparation (p. 233)
- Mathematics, minor in (p. 236)

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of applied mathematics, which focuses on the analytical and computational techniques necessary to solve many of today's problems. These methods traditionally had been applied in such areas as chemistry and physics, but now are applied in many other areas.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will write mathematics (not including mathematical proofs) clearly, concisely and correctly.
- Students will write mathematical proofs clearly, concisely and correctly.
- Students will solve mathematical problems.
- Students will solve and interpret mathematical problems which originate from applications outside of mathematics.
- Students will use technology to solve and/or explore mathematics problems.
- Students will read and comprehend mathematical works.
- Students will collaborate in projects.
- Students will make effective presentations to demonstrate their their understanding of mathematical ideas.
- Students will write prose about mathematics.

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 255	Introduction to Computational Mathematics	3
	or CMSC 245 Introduction to Programming Using C++	
	or EGRE 245 Engineering Programming	
MATH 300	Introduction to Mathematical Reasoning ¹	3
MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions	3
• Concentration requirements		
MATH 301	Differential Equations ¹	3
MATH 415	Numerical Methods	3
MATH 435	Mathematical and Computational Modeling	3
Select two from:		6
MATH 432	Ordinary Differential Equations	
MATH 433	Partial Differential Equations	
MATH 434	Discrete Dynamical Systems	
Concentration electives ²		0-6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4
STAT 212	Concepts of Statistics	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6

Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) 8-10

Natural science elective (different from chosen science sequence) 3-5

Open electives

Select any course. 21-39

Total Hours 120

1

These courses/credits require a minimum grade of C.

2

Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major.

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences: 8-10		
Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for diversities in the human experience)	3

Term Hours: 14

Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	Experiential fine arts	1-3
	General education course (select AOI for global perspectives)	3

Term Hours: 15-17

Sophomore year

Fall semester		
MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Foreign language 101	3

Term Hours: 16

Spring semester

MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
	Foreign language 102	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	General education course (select BOK to complete breadth of knowledge requirement)	3

Term Hours: 15

Junior year

Fall semester		
MATH 407	Advanced Calculus	3

Concentration elective (upper level)	3
Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
BIOL 151 Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	-
CHEM 101 General Chemistry I & CHEZ 101 and General Chemistry Laboratory I	-
PHYS 201 General Physics I	-
PHYS 207 University Physics I	-
Open electives	6

Term Hours: 16-17

Spring semester

MATH 415 Numerical Methods	3
Concentration elective (upper level)	3
Natural sciences sequence (Select one of the following with appropriate matching course.)	4-5
BIOL 152 Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	-
CHEM 102 General Chemistry II & CHEZ 102 and General Chemistry Laboratory II	-
PHYS 202 General Physics II	-
PHYS 208 University Physics II	-
Open electives	6

Term Hours: 16-17

Senior year

Fall semester

MATH 432 Ordinary Differential Equations or MATH 433 or Partial Differential Equations or Discrete Dynamical Systems or MATH 434	3
MATH 435 Mathematical and Computational Modeling	3
Natural sciences elective ¹	3-5
Open electives	6

Term Hours: 15-17

Spring semester

MATH 432 Ordinary Differential Equations or MATH 433 or Partial Differential Equations or Discrete Dynamical Systems or MATH 434	3
MATH 490 Mathematical Expositions	3
Open electives	7-9

Term Hours: 13-15

Total Hours: 120-128

¹

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students in the applied mathematics and biomathematics concentrations to earn both the B.S. in Mathematical Sciences and the M.S. in Mathematical Sciences with a concentration in applied mathematics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are better prepared for a career in a technical industry, for a career in teaching and/or for further studies in a quantitative Ph.D. program, such as mathematics, data sciences or statistics. An accelerated B.S. and M.S. degree in Mathematics offers a direct pathway toward high-paying positions in big tech companies and financial institutions. Over the past decade, the increasingly competitive application process for Ph.D. programs in mathematics has made it extremely difficult for students holding only a B.S. degree to be admitted. On the other hand, students graduating from VCU with a master's in mathematical sciences have a history of getting into highly rated Ph.D. programs, often with generous funding.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours, including STAT 212, MATH 255, MATH 301, MATH 307, MATH 310, MATH 380 (this course for the biomathematics concentration only) and MATH 407; an overall GPA of 3.0; and a GPA of 3.0 in mathematics course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit general GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than June 15 of that year. Three reference letters (at least one from a Department of Mathematics and Applied Mathematics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the Mathematical Sciences M.S. program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate mathematics adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Mathematical Sciences degree (with a concentration in either applied mathematics or biomathematics) will be awarded upon completion of a minimum of 120 credits in undergraduate program credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

Students must pass a comprehensive exam in the core courses and selected elective courses determined by the Department of Mathematics and Applied Mathematics.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for major requirements and required major electives for the undergraduate degree and are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate mathematics courses that may be taken as an undergraduate once a student is admitted to the program are below.

Course	Title	Hours
MATH 507	Bridge to Modern Analysis (may count as undergraduate major elective)	3
MATH 515	Numerical Analysis (may count as undergraduate major requirement or open elective)	3
MATH 535	Introduction to Dynamical Systems (may count as undergraduate major elective)	3
MATH 610	Advanced Linear Algebra	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
MATH 407	Advanced Calculus	3
MATH 432	Ordinary Differential Equations	3
	Experiential fine arts	1-3
	General education course	3
	Natural science sequence	4-5
	Term Hours:	14-17
Spring semester		
MATH 433	Partial Differential Equations	3
MATH 435	Mathematical and Computational Modeling	3
	General education course	3
	Natural science sequence	4-5
	Open elective	3
	Term Hours:	16-17
Senior year		
Fall semester		
MATH 507	Bridge to Modern Analysis	3
MATH 535	Introduction to Dynamical Systems	3

MATH 585	Biomathematics Seminar: ____ (biomathematics concentration only)	1
MATH 610	Advanced Linear Algebra	3
	Natural science elective	3-5
	Open electives	3
	Term Hours:	15-18
Spring semester		
MATH 490	Mathematical Expositions	3
MATH 515	Numerical Analysis	3
	Concentration elective (appropriate to applied mathematics or biomathematics)	3
	Open electives	6
	Term Hours:	15
Fifth year		
Fall semester		
MATH 615	Iterative Numerical Methods	3
MATH 769	Topics in Applied Mathematics: ____	3
	Graduate math elective	3
	Term Hours:	9
Spring semester		
MATH 632	Ordinary Differential Equations I	3
	or MATH 633 Partial Differential Equations	
MATH 690	Research Seminar	2
	Math electives (600- to 700-level)	6
	Term Hours:	11

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of biomathematics, which focuses on the overlap between mathematics and the disciplines of biology and medicine. This concentration covers the mathematical methods of modeling and analysis of phenomena in the life sciences.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will write mathematics (not including mathematical proofs) clearly, concisely and correctly.

- Students will write mathematical proofs clearly, concisely and correctly.
- Students will solve mathematical problems.
- Students will solve and interpret mathematical problems which originate from applications outside of mathematics.
- Students will use technology to solve and/or explore mathematics problems.
- Students will read and comprehend mathematical works.
- Students will collaborate in projects.
- Students will make effective presentations to demonstrate their their understanding of mathematical ideas.
- Students will write prose about mathematics.

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245	Introduction to Programming Using C++	

or EGRE 245	Engineering Programming	
MATH 300	Introduction to Mathematical Reasoning ¹	3
MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions	3
• Concentration requirements		
MATH 301	Differential Equations ¹	3
MATH 380	Introduction to Mathematical Biology	4
MATH 432	Ordinary Differential Equations	3
or MATH 433	Partial Differential Equations	
or MATH 434	Discrete Dynamical Systems	
MATH 435	Mathematical and Computational Modeling	3
MATH 585	Biomathematics Seminar:____	1
Concentration electives ²		0-6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4
STAT 212	Concepts of Statistics	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6
Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		8-10
Natural science elective (different from chosen science sequence)		3-5
Open electives		
Select any course.		22-40
Total Hours		120

1

These courses/credits require a minimum grade of C.

2

Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major.

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences:		
Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOS 151	Introduction to Biological Science Laboratory I	1

BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

		Hours
Fall semester		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for diversities in the human experience)	3
Term Hours:		14
Spring semester		
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	Experiential fine arts	1-3
	General education course (select AOI for global perspectives)	3
Term Hours:		15-17

Sophomore year

Fall semester		
MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Term Hours:		16
Spring semester		
MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
Foreign language 102		3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:		15
Junior year		
Fall semester		
MATH 380	Introduction to Mathematical Biology	4
	Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
Open electives		6
Term Hours:		14-15
Spring semester		
MATH 432	Ordinary Differential Equations	3
or	or Partial Differential Equations	
MATH 433	or Discrete Dynamical Systems	
or	MATH 434	
	Concentration elective (upper level)	3
	Natural sciences sequence (Select one of the following with appropriate matching course.)	4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
Open electives		6
Term Hours:		16-17
Senior year		
Fall semester		
MATH 407	Advanced Calculus	3
MATH 435	Mathematical and Computational Modeling	3

MATH 585	Biomathematics Seminar:_____	1
Natural sciences elective ¹		3-5
Open electives		6
Term Hours:		16-18
Spring semester		
MATH 490	Mathematical Expositions	3
MATH 585	Biomathematics Seminar:_____	1
Concentration elective (upper-level)		3
Open electives		7-9
Term Hours:		14-16
Total Hours:		120-128

1

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students in the applied mathematics and biomathematics concentrations to earn both the B.S. in Mathematical Sciences and the M.S. in Mathematical Sciences with a concentration in applied mathematics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are better prepared for a career in a technical industry, for a career in teaching and/or for further studies in a quantitative Ph.D. program, such as mathematics, data sciences or statistics. An accelerated B.S. and M.S. degree in Mathematics offers a direct pathway toward high-paying positions in big tech companies and financial institutions. Over the past decade, the increasingly competitive application process for Ph.D. programs in mathematics has made it extremely difficult for students holding only a B.S. degree to be admitted. On the other hand, students graduating from VCU with a master's in mathematical sciences have a history of getting into highly rated Ph.D. programs, often with generous funding.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours, including STAT 212, MATH 255, MATH 301, MATH 307, MATH 310, MATH 380 (this course for the biomathematics concentration only) and MATH 407; an overall GPA of 3.0; and a GPA of 3.0 in mathematics course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit general GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the

undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than June 15 of that year. Three reference letters (at least one from a Department of Mathematics and Applied Mathematics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the Mathematical Sciences M.S. program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate mathematics adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Mathematical Sciences degree (with a concentration in either applied mathematics or biomathematics) will be awarded upon completion of a minimum of 120 credits in undergraduate program credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

Students must pass a comprehensive exam in the core courses and selected elective courses determined by the Department of Mathematics and Applied Mathematics.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for major requirements and required major electives for the undergraduate degree and are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate mathematics courses that may be taken as an undergraduate once a student is admitted to the program are below.

Course	Title	Hours
MATH 507	Bridge to Modern Analysis (may count as undergraduate major elective)	3
MATH 515	Numerical Analysis (may count as undergraduate major requirement or open elective)	3
MATH 535	Introduction to Dynamical Systems (may count as undergraduate major elective)	3
MATH 610	Advanced Linear Algebra	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
MATH 407	Advanced Calculus	3

MATH 432	Ordinary Differential Equations	3
Experiential fine arts		1-3
General education course		3
Natural science sequence		4-5
Term Hours:		14-17
Spring semester		
MATH 433	Partial Differential Equations	3
MATH 435	Mathematical and Computational Modeling	3
General education course		3
Natural science sequence		4-5
Open elective		3
Term Hours:		16-17
Senior year		
Fall semester		
MATH 507	Bridge to Modern Analysis	3
MATH 535	Introduction to Dynamical Systems	3
MATH 585	Biomathematics Seminar:____ (biomathematics concentration only)	1
MATH 610	Advanced Linear Algebra	3
Natural science elective		3-5
Open electives		3
Term Hours:		15-18
Spring semester		
MATH 490	Mathematical Expositions	3
MATH 515	Numerical Analysis	3
Concentration elective (appropriate to applied mathematics or biomathematics)		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
MATH 615	Iterative Numerical Methods	3
MATH 769	Topics in Applied Mathematics: ____	3
Graduate math elective		3
Term Hours:		9
Spring semester		
MATH 632 or MATH 633	Ordinary Differential Equations I Partial Differential Equations	3
MATH 690	Research Seminar	2
Math electives (600- to 700-level)		6
Term Hours:		11

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a

technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research.

Student learning outcomes

Upon completing this program:

- Students will write mathematics (not including mathematical proofs) clearly, concisely and correctly.
- Students will write mathematical proofs clearly, concisely and correctly.
- Students will solve mathematical problems.
- Students will solve and interpret mathematical problems which originate from applications outside of mathematics.
- Students will use technology to solve and/or explore mathematics problems.
- Students will read and comprehend mathematical works.
- Students will collaborate on projects.
- Students will make effective presentations to demonstrate their understanding of mathematical ideas.
- Students will write prose about mathematics.

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 300	Introduction to Mathematical Reasoning ¹	3
• Concentration requirements		
Select one of the two course groups.		12-13
Group 1		
MATH 407	Advanced Calculus	
MATH 490	Mathematical Expositions	
MATH 255	Introduction to Computational Mathematics	
or CMSC 245	Introduction to Programming Using C++	
or EGRE 245	Engineering Programming	
MATH 301	Differential Equations	
or OPER 327	Mathematical Modeling	
Group 2		
SSOR 490	Developing Professional Skills in Operations Research and Statistics	
SSOR 495	Expositions in Statistical Sciences and Operations Research	
STAT 309	Introduction to Probability Theory	
STAT 321	Introduction to Statistical Computing	
or MATH 255	Introduction to Computational Mathematics	
or CMSC 245	Introduction to Programming Using C++	
or EGRE 245	Engineering Programming	
STAT 403	Introduction to Stochastic Processes	
Concentration electives		
Select one of the following options:		12-18
Additional upper-division credits in MATH, STAT or OPER, with at least nine credits from course offerings at 400 to 500 level		
Additional upper-division credits in MATH, STAT or OPER, with at least six credits from course offerings at 400 to 500 level and complete a minor or double major		
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4
STAT 212	Concepts of Statistics	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6

Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) 8-10

Natural science elective (different from chosen science sequence) 3-5

Open electives

Select any course. 21-40

Total Hours 120

1

These courses/credits require a minimum grade of C.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences:		8-10

Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3

BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1

Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3

CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
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CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1

Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4

PHYS 202	General Physics II	4
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Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5

PHYS 208	University Physics II	5
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What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for diversities in the human experience)	3
Term Hours:		14

Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	Experiential fine arts	1-3
	General education course (select AOI for global perspectives)	3
Term Hours:		15-17

Sophomore year

Fall semester		Hours
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Foreign language 101	3
	Group course	3
MATH 255	Introduction to Computational Mathematics (Group 1)	3
STAT 321	Introduction to Statistical Computing (Group 2)	3
Term Hours:		16

Spring semester

MATH 310	Linear Algebra	3
	Select one:	3
MATH 301	Differential Equations	3
OPER 327	Mathematical Modeling (Group 1)	3
STAT 309	Introduction to Probability Theory (Group 2)	3
	Foreign language 102	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:		15

Junior year**Fall semester**

	Select one:	3
MATH 407	Advanced Calculus (Group 1)	3
STAT 403	Introduction to Stochastic Processes	3
	Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
BIOL 151	Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	-
CHEM 101	General Chemistry I	-
& CHEZ 101	and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
	Open electives	7
Term Hours:		14-15

Spring semester

	Concentration electives (upper level)	6
	Natural sciences sequence (Select one of the following with appropriate matching course.)	4-5
BIOL 152	Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	-
CHEM 102	General Chemistry II	-
& CHEZ 102	and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
	Open electives	6
Term Hours:		16-17

Senior year

Fall semester		Hours
SSOR 490	Developing Professional Skills in Operations Research and Statistics (taken by Group 2 only)	3
	Concentration electives (400-500 level; Group 1 takes six credits; Group 2 takes three credits)	3-6
	Natural sciences elective ¹	3-5
	Open electives	6
Term Hours:		15-17

Spring semester

MATH 490	Mathematical Expositions (Group 1 or capstone)	1-2
or	SSOR 495 or Expositions in Statistical Sciences and Operations Research	
	Concentration elective (upper-level) or elective to complete minor or double major	3
	Concentration elective (400-500 level) or elective to complete minor or double major	3-4
	Open electives	6
Term Hours:		15
Total Hours:		120-126

1

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of mathematics, which fosters the understanding of the power and the beauty of pure mathematics and its applications to various branches of knowledge.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will write mathematics (not including mathematical proofs) clearly, concisely and correctly.
- Students will write mathematical proofs clearly, concisely and correctly.
- Students will solve mathematical problems.
- Students will solve and interpret mathematical problems which originate from applications outside of mathematics.
- Students will use technology to solve and/or explore mathematics problems.
- Students will read and comprehend mathematical works.
- Students will collaborate in projects.
- Students will make effective presentations to demonstrate their their understanding of mathematical ideas.
- Students will write prose about mathematics.

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 255	Introduction to Computational Mathematics	3
	or CMSC 245 Introduction to Programming Using C++	
	or EGRE 245 Engineering Programming	
MATH 300	Introduction to Mathematical Reasoning ¹	3
MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions	3
• Concentration requirements		
MATH 301	Differential Equations ¹	3
MATH 350	Introductory Combinatorics	3
	or MATH 356 Graphs and Algorithms	
MATH 401	Introduction to Abstract Algebra	3
MATH 409	General Topology	3
MATH 427	Excursions in Analysis: Real	3
	or MATH 428 Excursions in Analysis: Complex	
	or MATH 429 Excursions in Analysis: Applied	
Concentration electives ²		0-6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4
STAT 212	Concepts of Statistics	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6

Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) 8-10

Natural science elective (different from chosen science sequence) 3-5

Open electives

Select any course. 21-39

Total Hours 120

1

These courses/credits require a minimum grade of C.

2

Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major.

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences: 8-10		
Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for diversities in the human experience)	3
Term Hours:		14

Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	Experiential fine arts	1-3
	General education course (select AOI for global perspectives)	3
Term Hours:		15-17

Sophomore year

Fall semester		Hours
MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Foreign language 101	3
Term Hours:		16

Spring semester

MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
	Foreign language 102	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:		15

Junior year

Fall semester		Hours
MATH 407	Advanced Calculus	3

Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
Open electives		7
Term Hours:		14-15
Spring semester		
MATH 427 or MATH 428 or MATH 429	Excursions in Analysis: Real or Excursions in Analysis: Complex or Excursions in Analysis: Applied	3
Concentration elective (upper level)		3
Natural sciences sequence (Select one of the following with appropriate matching course.)		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
Open electives		6
Term Hours:		16-17
Senior year		
Fall semester		
MATH 401	Introduction to Abstract Algebra	3
MATH 409	General Topology	3
Natural sciences elective ¹		3-5
Open electives		6
Term Hours:		15-17
Spring semester		
MATH 350 or MATH 356	Introductory Combinatorics or Graphs and Algorithms	3
MATH 490	Mathematical Expositions	3
Concentration elective (upper-level)		3
Open electives		6
Term Hours:		15
Total Hours:		120-126

1

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students in the mathematics concentration to earn both the B.S. in Mathematical

Sciences and the M.S. in Mathematical Sciences with a concentration in mathematics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are better prepared for a career in a technical industry, for a career in teaching and/or for further studies in a quantitative Ph.D. program, such as mathematics, data sciences or statistics. An accelerated B.S. and M.S. degree in Mathematics offers a direct pathway toward high-paying positions in big tech companies and financial institutions. Over the past decade, the increasingly competitive application process for Ph.D. programs in mathematics has made it extremely difficult for students holding only a B.S. degree to be admitted. On the other hand, students graduating from VCU with a master's in mathematical sciences have a history of getting into highly rated Ph.D. programs, often with generous funding.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours, including STAT 212, MATH 255, MATH 301, MATH 307, MATH 310 and MATH 407; an overall GPA of 3.0; and a GPA of 3.0 in mathematics course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit general GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following completion of their junior year, but no later than June 15 of that year. Three reference letters (at least one from a Department of Mathematics and Applied Mathematics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the Mathematical Sciences M.S. program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate mathematics adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Mathematical Sciences degree (with a concentration in either applied mathematics or biomathematics) will be awarded upon completion of a minimum of 120 credits in undergraduate

program credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

Students must pass a comprehensive exam in the core courses and selected elective courses determined by the Department of Mathematics and Applied Mathematics.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may substitute for major requirements and required major electives for the undergraduate degree and are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate mathematics courses that may be taken as an undergraduate once a student is admitted to the program are below.

Course	Title	Hours
MATH 502 or MATH 610	Abstract Algebra I Advanced Linear Algebra	3
MATH 507	Bridge to Modern Analysis	3
MATH 550 or MATH 602	Combinatorics Abstract Algebra II	3
MATH 556	Graph Theory	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
MATH 401	Introduction to Abstract Algebra	3
MATH 407	Advanced Calculus	3
	Experiential fine arts	1-3
	General education course	3
	Natural science sequence	4-5
	Term Hours:	14-17
Spring semester		
MATH 427 or MATH 428 or MATH 429	Excursions in Analysis: Real Excursions in Analysis: Complex Excursions in Analysis: Applied	3
	Concentration elective	3
	General education course	3
	Natural science sequence	4-5
	Open elective	3
	Term Hours:	16-17
Senior year		
Fall semester		
MATH 502 or MATH 610	Abstract Algebra I Advanced Linear Algebra	3
MATH 507	Bridge to Modern Analysis	3
MATH 556	Graph Theory	3
	Natural science elective	3-5
	Open elective	3
	Term Hours:	15-17

Spring semester		
MATH 490	Mathematical Expositions	3
MATH 550 or MATH 602	Combinatorics Abstract Algebra II	3
	Concentration elective	3
	Open electives	6
	Term Hours:	15
Fifth year		
Fall semester		
MATH 502 or MATH 610	Abstract Algebra I Advanced Linear Algebra	3
	Math electives (600 to 700-level)	6
	Term Hours:	9
Spring semester		
MATH 550 or MATH 602	Combinatorics Abstract Algebra II	3
MATH 607 or MATH 707	Measure and Integration Theory Functional Analysis I	3
MATH 656	Advanced Graph Theory	3
MATH 690	Research Seminar	2
	Term Hours:	11

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of secondary teacher preparation, which prepares students for teaching mathematics in secondary schools when completed in conjunction with the Master of Teaching degree offered through the School of Education as part of the Extended Teacher Preparation Program.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will write mathematics (not including mathematical proofs) clearly, concisely and correctly.
- Students will write mathematical proofs clearly, concisely and correctly.
- Students will solve mathematical problems.

- Students will solve and interpret mathematical problems which originate from applications outside of mathematics.
- Students will use technology to solve and/or explore mathematics problems.
- Students will read and comprehend mathematical works.
- Students will collaborate in projects.
- Students will make effective presentations to demonstrate their their understanding of mathematical ideas.
- Students will write prose about mathematics.

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor’s degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the “Academic regulations and general degree requirement” section of this bulletin.

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245	Introduction to Programming Using C++	
or EGRE 245	Engineering Programming	
MATH 300	Introduction to Mathematical Reasoning ¹	3

MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions	3
• Concentration requirements		
MATH 404	Algebraic Structures and Functions	3
MATH 430	The History of Mathematics	3
MATH 454	Using Technology in the Teaching of Mathematics	3
MATH 505	Modern Geometry	3
OPER 327	Mathematical Modeling	3
Concentration electives ²		0-6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) ¹	4
STAT 212	Concepts of Statistics	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6
Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		8-10
Natural science elective (different from chosen science sequence)		3-5
Open electives		
Select any course.		21-39
Total Hours		120

1

These courses/credits require a minimum grade of C.

2

Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major (which could be in education).

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences:		8-10
Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		

CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

		Hours
Fall semester		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for diversities in the human experience)	3

Term Hours: 14

Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	Experiential fine arts	1-3
	General education course (select AOI for global perspectives)	3

Term Hours: 15-17

Sophomore year

Fall semester		
MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3

MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Foreign language 101 3

Term Hours: 16

Spring semester

MATH 310	Linear Algebra	3
OPER 327	Mathematical Modeling	3
Foreign language 102		3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	General education course (select BOK to complete breadth of knowledge requirement)	3

Term Hours: 15

Junior year

Fall semester

MATH 407	Advanced Calculus	3
MATH 430	The History of Mathematics	3
	Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
BIOL 151	Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	-
CHEM 101	General Chemistry I & CHEZ 101 and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
	Open electives	4-6

Term Hours: 14-17

Spring semester

MATH 404	Algebraic Structures and Functions	3
	Concentration elective (upper level)	3
	Natural sciences sequence (Select one of the following with appropriate matching course.)	4-5
BIOL 152	Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	-
CHEM 102	General Chemistry II & CHEZ 102 and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
	Open electives	6

Term Hours: 16-17

Senior year

Fall semester

MATH 454	Using Technology in the Teaching of Mathematics	3
MATH 505	Modern Geometry	3
	Natural sciences elective ¹	3-5
	Open electives	6

Term Hours: 15-17

Spring semester

MATH 490	Mathematical Expositions	3
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Concentration elective (upper-level)	3
Open electives	9
Term Hours:	15
Total Hours:	120-128

1

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Mathematics, minor in

A minor in mathematics consists of at least 18 credits (and a minimum of five courses) offered by the Department of Mathematics and Applied Mathematics, including the following:

Course	Title	Hours
Select a minimum of three credits of calculus		3
Select a minimum of nine upper-level credits		9
Select six additional credits.		6
Total Hours		18

None of the following courses may be used to fulfill the required 18 credits:

Course	Title	Hours
MATH 303	Investigations in Geometry	3
MATH 361	Numbers and Operations	3
MATH 362	Algebra and Functions	3
Any 100-level course		

Courses in subjects areas other than MATH cannot be applied to the minor. A minimum GPA of 2.0 must be achieved in the minor. Students in the mathematical sciences majors cannot minor in mathematics.

Department of Military Science and Leadership

[has.vcu.edu/mil](http://www.has.vcu.edu/mil/) (<http://www.has.vcu.edu/mil/>)

The military science curriculum teaches the principles of management and leadership as a foundation for civilian and military careers. Graduates of this program are eligible for appointments as commissioned officers in the U.S. Army, the U.S. Army Reserve or Army National Guard.

For more information on participating in ROTC or on scholarship opportunities, please contact rotc@vcu.edu or call (804) 828-7682.

Scholarships

Army ROTC offers students several opportunities for scholarships worth more than \$29,000 at VCU. High school students and students on campus may apply for a four-year scholarship. Two-year scholarships also are available to on-campus students. All scholarships cover VCU tuition, most books, laboratory fees and provide between \$300 to \$500 a month during the school year for living expenses.

The four-year program

The traditional four-year program is divided into two parts.

Basic course

Normally freshman and sophomore years, which cover military history, traditions, organizations and national defense. The emphasis in the course is on leadership development and general life skills. There is no commitment to the U.S. Army, unless the student is on a ROTC scholarship.

Advanced course

Departmental approval is required to enter junior- and senior-level classes. They cover instruction and practice in management, tactics, ethics, professionalism and continued leadership development.

All ROTC uniforms and materials are furnished at no cost. Students selected for advanced classes receive \$450 or \$500 a month during the school year.

During the summer between the junior and senior years, students will attend a four-week course, Leadership Development and Assessment Camp. LDAC provides hands-on experience and evaluations for students at Fort Lewis, Wash.

The two-year program

Students who have not taken any of the basic classes are still eligible for a commission through the two-year program.

In this program, student attend the Leader's Training Course at Fort Knox, Ky., for four weeks during the summer. Upon completion of LTC, students are eligible for the advanced courses in their junior and senior years.

Simultaneous membership program

This program allows students to become members of the Army National Guard or the Army Reserve while enrolled in Army ROTC.

Advanced ROTC SMP students are paid for their guard/reserve training plus they receive a monthly ROTC allowance of \$400, \$450 or \$500 for up to three years.

ROTC for veterans

If students are veterans, military experience can fulfill the basic course requirements. Some veterans may enroll directly into advanced courses. In addition to any financial assistance received from ROTC, veterans still are qualified to receive any and all VEAP/GI Bill/Army College Fund benefits to which they are entitled.

Department of Philosophy

Donald Smith, Ph.D.

Associate professor and chair

philosophy.vcu.edu (<http://philosophy.vcu.edu/>)

Philosophy aims at a deeper understanding of matters that should most concern the human race. Philosophical questions crop up in science, religion, art, morality, politics, medicine and in everyday life. Students enrolled in philosophy are encouraged to think seriously about fundamental issues in all these domains and to formulate coherent and well-grounded points of view. Because of its extensive use of critical and analytical reasoning, philosophy equips students for careers in medicine, law, business and other fields that require careful thought and the clear expression of ideas.

The Department of Philosophy offers a Bachelor of Arts in Philosophy. The department offers courses for students in other programs, as well as for those majoring in philosophy or religious studies.

- Philosophy, Bachelor of Arts (B.A.) (p. 237)
- Philosophy, Bachelor of Arts (B.A.) with a concentration in:
 - Ethics and public policy (p. 238)
 - Philosophy and law (p. 240)
 - Philosophy and science (p. 242)
- Philosophy, minor in (p. 245)
- Philosophy of law, minor in (p. 245)

Philosophy, Bachelor of Arts (B.A.)

The Bachelor of Arts in Philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Majors intending to pursue graduate studies in philosophy are advised to choose the curriculum outlined below.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems
4. Demonstrate the ability to think critically and systemically about philosophical problems, both abstract and practical, and to write clearly and cogently about them
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.

Degree requirements for Philosophy, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHIL 222	Logic	3
PHIL 490	Seminar in Philosophy	3
• Additional major requirements		
PHIL 103	Ancient Greek and Medieval Western Philosophy	3
PHIL 104	Modern Western Philosophy	3
Select three of the following with at least one course each from Group A and Group B.		9
Group A		
PHIL 320	Philosophy of Law	

PHIL 327	Normative Ethics	
PHIL 328	Metaethics	
PHIL 335	Social and Political Philosophy	
Group B		
PHIL 300	Philosophical Concepts	
PHIL 301	Metaphysics	
PHIL 302	Epistemology	
PHIL 303	Philosophy of Language	
Group C		
PHIL 391	Topics in Philosophy	
• Major electives		
PHIL electives (any level)		6
PHIL elective (300 level or higher)		3
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
PHIL 201	Introduction to Ethics ¹	3
or PHIL 211	History of Ethics	
or PHIL 212	Ethics and Applications	
or PHIL 213	Ethics and Health Care	
or PHIL 214	Ethics and Business	
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		47-55
Total Hours		120

1

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select quantitative foundations)		3-4

Open elective		3
Term Hours:		14-17
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		6
Term Hours:		16
Sophomore year		
Fall semester		
PHIL 103	Ancient Greek and Medieval Western Philosophy	3
PHIL 201	Introduction to Ethics ¹	3
or	or History of Ethics ¹	
PHIL 211	or Ethics and Applications ¹	
or	or Ethics and Health Care ¹	
PHIL 212	or Ethics and Business ¹	
or		
PHIL 213		
or		
PHIL 214		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Open elective (or select general education course that satisfies AOI for diversities in the human experience if PHIL 201 was not selected above)		3
Term Hours:		15
Spring semester		
PHIL 222	Logic	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15
Junior year		
Fall semester		
PHIL 104	Modern Western Philosophy	3
PHIL 300	Philosophical Concepts	3
or	or Metaphysics	
PHIL 301	or Epistemology	
or	or Philosophy of Language	
PHIL 302		
or		
PHIL 303		
Open electives		9
Term Hours:		15

Spring semester		
PHIL 320	Philosophy of Law	3
or	or Normative Ethics	
PHIL 327	or Metaethics	
or	or Social and Political Philosophy	
PHIL 328		
or		
PHIL 335		
PHIL electives		6
Open electives		6
Term Hours:		15
Senior year		
Fall semester		
PHIL 301	Metaphysics	3
or	or Philosophical Concepts	
PHIL 300	or Epistemology	
or	or Philosophy of Language	
PHIL 302	or Philosophy of Law	
or	or Normative Ethics	
PHIL 303	or Metaethics	
or	or Social and Political Philosophy	
PHIL 320	or Topics in Philosophy	
or		
PHIL 327		
or		
PHIL 328		
or		
PHIL 335		
or		
PHIL 391		
PHIL elective (300-level or higher)		3
Open electives		9
Term Hours:		15
Spring semester		
PHIL 490	Seminar in Philosophy	3
Open electives		12
Term Hours:		15
Total Hours:		120-123

¹

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Philosophy, Bachelor of Arts (B.A.) with a concentration in ethics and public policy

The Bachelor of Arts in Philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Students whose main interests in philosophy are ethics, political philosophy, philosophy of law or public policy (and who may wish to pursue graduate work in law, political science, economics and

related areas) will probably want to choose the ethics and public policy concentration.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems
4. Demonstrate the ability to think critically and systemically about philosophical problems, both abstract and practical, and to write clearly and cogently about them
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.

Degree requirements for Philosophy, Bachelor of Arts (B.A.) with a concentration in ethics and public policy

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHIL 222	Logic	3
PHIL 490	Seminar in Philosophy	3
• Additional major requirements		
PHIL 101	Introduction to Philosophy	3
or PHIL 103	Ancient Greek and Medieval Western Philosophy	
or PHIL 104	Modern Western Philosophy	
PHIL 300	Philosophical Concepts	3
or PHIL 301	Metaphysics	
or PHIL 302	Epistemology	
or PHIL 303	Philosophy of Language	
Select two of the following:		6
PHIL 320	Philosophy of Law	
PHIL 327	Normative Ethics	
PHIL 328	Metaethics	
PHIL 335	Social and Political Philosophy	
• Major electives		
PHIL electives (any level)		6
Non-PHIL courses (from list below)		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
PHIL 201	Introduction to Ethics ¹	3
or PHIL 211	History of Ethics	
or PHIL 212	Ethics and Applications	
or PHIL 213	Ethics and Health Care	
or PHIL 214	Ethics and Business	

Experiential fine arts ²	1-3
Foreign language through the 102 level (by course or placement)	0-6
Open electives	
Select any course.	47-55
Total Hours	120

1

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Non-PHIL course options for major requirements (choose two)

Course	Title	Hours
CRJS 324	Courts and the Judicial Process	3
CRJS 355	Criminological Theory	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
ECON 419/HIST 333	History of Economic Thought	3
POLI 310	Public Policy	3
POLI 314	U.S. Constitutional Law	3
POLI 315	Courts and Politics	3
SOCY 302	Contemporary Social Problems	3
SOCY 430	Politics, Power and Ideology	3

Other appropriate courses approved by the Department of Philosophy

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
Experiential fine arts	1-3
General education course (select AOI for global perspectives)	3
General education course (select quantitative foundations)	3-4
Open elective	3
Term Hours:	14-17
Spring semester	
HUMS 202 Choices in a Consumer Society	1

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		6
Term Hours:		16

Sophomore year

Fall semester

PHIL 101	Introduction to Philosophy	3
or	or Ancient Greek and Medieval Western Philosophy	
PHIL 103	Philosophy	
or	or Modern Western Philosophy	
PHIL 104		
PHIL 201	Introduction to Ethics ¹	3
or	or History of Ethics ¹	
PHIL 211	or Ethics and Applications ¹	
or	or Ethics and Health Care ¹	
PHIL 212	or Ethics and Business ¹	
or		
PHIL 213		
or		
PHIL 214		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		
Open elective (or select general education course that satisfies AOI for diversities in the human experience if PHIL 201 was not selected above)		3
Term Hours:		15

Spring semester

PHIL 222	Logic	3
Foreign language 102		
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Junior year

Fall semester

PHIL 320	Philosophy of Law	3
or	or Normative Ethics	
PHIL 327	or Metaethics	
or	or Social and Political Philosophy	
PHIL 328		
or		
PHIL 335		
Non-PHIL course (from list)		3
Open electives		9
Term Hours:		15

Spring semester

PHIL 320	Philosophy of Law	3
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or	or Normative Ethics	
PHIL 327	or Metaethics	
or	or Social and Political Philosophy	
PHIL 328		
or		
PHIL 335		
PHIL elective		3
Non-PHIL course (from list)		3
Open electives		6
Term Hours:		15

Senior year

Fall semester

PHIL 300	Philosophical Concepts	3
or	or Metaphysics	
PHIL 301	or Epistemology	
or	or Philosophy of Language	
PHIL 302		
or		
PHIL 303		
PHIL elective		3
Open electives		9
Term Hours:		15

Spring semester

PHIL 490	Seminar in Philosophy	3
Open electives		12
Term Hours:		15
Total Hours:		120-123

¹

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and law

The Bachelor of Arts in Philosophy with a concentration in philosophy and law is an interdisciplinary curriculum requiring a minimum of 120 credits, with at least 30 of those credits in the major area, at least half of which must be upper-level.

Students whose main interests are philosophy of law and the relation between philosophy and law (and who may wish to pursue graduate work in law and related areas) will probably want to choose the philosophy and law concentration.

Student learning outcomes

Upon completing this program, students will:

1. Demonstrate a good knowledge of a facility with the methods and concepts of modern, analytic philosophy.
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics.
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems.

4. Demonstrate the ability to think critically and systematically about philosophical problems, both abstract and practical, and to write clearly and cogently about them.
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.
6. Demonstrate a good knowledge of philosophical questions about law including but not limited to questions about the nature of law and its authority.
7. Demonstrate a good knowledge of the specific workings of the law especially with respect to constitutional issues.

Degree requirements for Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and law

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHIL 222	Logic	3
PHIL 490	Seminar in Philosophy	3
• Additional major requirements		
PHIL 101 or PHIL 103 or PHIL 104	Introduction to Philosophy Ancient Greek and Medieval Western Philosophy Modern Western Philosophy	3
PHIL 300 or PHIL 301 or PHIL 302 or PHIL 303	Philosophical Concepts Metaphysics Epistemology Philosophy of Language	3
PHIL 320	Philosophy of Law	3
PHIL 327 or PHIL 328 or PHIL 335	Normative Ethics Metaethics Social and Political Philosophy	3
• Major electives		
PHIL elective (any level)		3
Non-PHIL courses (from list below)		9
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
PHIL 201 or PHIL 211 or PHIL 212 or PHIL 213 or PHIL 214	Introduction to Ethics ¹ History of Ethics Ethics and Applications Ethics and Health Care Ethics and Business	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		47-55
Total Hours		120

¹

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Non-PHIL course options for major requirements (choose three)

Course	Title	Hours
CRJS/ENGL 302	Legal Writing	3
CRJS 324	Courts and the Judicial Process	3
CRJS 355	Criminological Theory	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
POLI 313	U.S. Constitutional Law: Civil Rights and Civil Liberties	3
POLI 314	U.S. Constitutional Law	3
POLI 315	Courts and Politics	3
POLI 316	Women and the Law	3
POLI 372	Ethics, Law and Governance	3
Other appropriate courses approved by the Department of Philosophy		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select quantitative foundations)		3-4
Open elective		3
Term Hours:		14-17

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3

Open electives	6
Term Hours:	16
Sophomore year	
Fall semester	
PHIL 101 Introduction to Philosophy	3
or PHIL 103 or PHIL 104	or Ancient Greek and Medieval Western Philosophy or Modern Western Philosophy
PHIL 201 Introduction to Ethics ¹	3
or PHIL 211 or PHIL 212	or History of Ethics ¹ or Ethics and Applications ¹ or Ethics and Health Care ¹ or Ethics and Business ¹
or PHIL 213 or PHIL 214	
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101	3
Open elective (or select general education course that satisfies AOI for diversities in the human experience if PHIL 201 was not selected above)	3
Term Hours:	15
Spring semester	
PHIL 222 Logic	3
Foreign language 102	3
General education course (select BOK to complete breadth of knowledge requirement)	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Open elective	3
Term Hours:	15
Junior year	
Fall semester	
PHIL 320 Philosophy of Law	3
Non-PHIL course (from list)	3
Open electives	9
Term Hours:	15
Spring semester	
PHIL 327 Normative Ethics	3
or PHIL 328 or PHIL 335	or Metaethics or Social and Political Philosophy
PHIL elective	3
Non-PHIL course (from list)	3
Open electives	6
Term Hours:	15
Senior year	
Fall semester	

PHIL 300 Philosophical Concepts	3
or PHIL 301 or PHIL 302 or PHIL 303	or Metaphysics or Epistemology or Philosophy of Language
Non-PHIL course (from list)	3
Open electives	9
Term Hours:	15
Spring semester	
PHIL 490 Seminar in Philosophy	3
Open electives	12
Term Hours:	15
Total Hours:	120-123

1

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and science

The Bachelor of Arts in Philosophy with a concentration in philosophy and science is an interdisciplinary curriculum requiring a minimum of 120 credits, with at least 30 of those credits in the major area, at least half of which must be upper-level.

Students with a strong interest in the philosophy of science and the relation between philosophy and science (and those considering graduate work in an area of science) will probably want to choose the philosophy and science concentration.

Student learning outcomes

Upon completing this program, students will:

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy.
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics.
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems.
4. Demonstrate the ability to think critically and systematically about philosophical problems, both abstract and practical, and to write clearly and cogently about them.
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.
6. Demonstrate a good knowledge of philosophical questions about scientific inquiry including but not limited to questions about scientific explanation, the confirmation and disconfirmation of scientific theories, and what distinguishes science from non-science.
7. Demonstrate a good knowledge of a particular area of science including the research methods of that area of science.

Degree requirements for Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHIL 222	Logic	3
PHIL 490	Seminar in Philosophy	3
• Additional major requirements		
PHIL 101	Introduction to Philosophy	3
or PHIL 103	Ancient Greek and Medieval Western Philosophy	
or PHIL 104	Modern Western Philosophy	
PHIL 331	Philosophy of Science	3
Select two of the following:		6
PHIL 300	Philosophical Concepts	
PHIL 301	Metaphysics	
PHIL 302	Epistemology	
PHIL 303	Philosophy of Language	
PHIL 320	Philosophy of Law	
PHIL 327	Normative Ethics	
PHIL 328	Metaethics	
PHIL 335	Social and Political Philosophy	
• Scientific focus area		
Choose one of the scientific focus areas listed below. Each focus area consists of a three-credit course on the research methods of a scientific discipline and six upper-level credits in that discipline.		9
• Major electives		
PHIL elective (any level)		3
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
PHIL 201	Introduction to Ethics ¹	3
or PHIL 211	History of Ethics	
or PHIL 212	Ethics and Applications	
or PHIL 213	Ethics and Health Care	
or PHIL 214	Ethics and Business	
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		47-55
Total Hours		120

1

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Scientific focus areas

Anthropology

Course	Title	Hours
ANTH 302	Archaeological Theory	
or ANTH 303	Archaeological Methods and Research Design	
Select six additional upper-level credits in ANTH courses		

Bioinformatics

Course	Title	Hours
LFSC 301	Integrative Life Sciences Research	
Select six upper-level credits in BNFO courses.		

Chemistry

Course	Title	Hours
CHEM 309	Quantitative Analysis	
or INSC 300	Experiencing Science	
Select six additional upper-level credits in CHEM courses		

Computer science

Course	Title	Hours
CMSC 303	Introduction to the Theory of Computation	
Select six additional upper-level credits in CMSC courses		

Economics

Course	Title	Hours
ECON 300	Contemporary Economic Issues	
Select six additional upper-level credits in ECON courses		

Environmental studies

Course	Title	Hours
LFSC 301	Integrative Life Sciences Research	
Select six additional upper-level credits in ENVS courses		

Mathematical sciences

Course	Title	Hours
MATH 300	Introduction to Mathematical Reasoning	
Select six additional upper-level credits in MATH or STAT or OPER courses		

Political science

Course	Title	Hours
POLI/SOCY 320	Research Methods in Political Science	
Select six additional upper-level credits in POLI courses		

Psychology

Course	Title	Hours
PSYC 317	Experimental Methods ¹	
Select six additional upper-level credits in PSYC courses		

1

This course is restricted to the majors in the relevant program.

Sociology

Course	Title	Hours
POLI/SOCY 320	Research Methods in Political Science	
Select six additional upper-level credits in SOCY courses		

Physics

Course	Title	Hours
PHYS 320	Modern Physics	
or INSC 300	Experiencing Science	
Select six additional upper-level credits in PHYS courses (or other appropriate courses approved by the Department of Philosophy)		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select quantitative foundations)		3-4
Open elective		3
Term Hours:		14-17

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		6
Term Hours:		16

Sophomore year

Fall semester		Hours
PHIL 101	Introduction to Philosophy	3
or PHIL 103	or Ancient Greek and Medieval Western Philosophy	
or PHIL 104	or Modern Western Philosophy	

PHIL 201	Introduction to Ethics ¹	3
or PHIL 211	or History of Ethics ¹	
or PHIL 212	or Ethics and Applications ¹	
or PHIL 213	or Ethics and Health Care ¹	
or PHIL 214	or Ethics and Business ¹	
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Open elective (or select general education course that satisfies AOI for diversities in the human experience if PHIL 201 was not selected above)		3
Term Hours:		15

Spring semester

PHIL 222	Logic	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Junior year

Fall semester		Hours
PHIL 331	Philosophy of Science	3
Open electives		9
Scientific focus area upper-level course		3
Term Hours:		15

Spring semester

PHIL 300	Philosophical Concepts	3
or PHIL 301	or Metaphysics	
or PHIL 302	or Epistemology	
or PHIL 303	or Philosophy of Language	
or PHIL 320	or Philosophy of Law	
or PHIL 327	or Normative Ethics	
or PHIL 328	or Metaethics	
or PHIL 335	or Social and Political Philosophy	
Open electives		9
Scientific focus area research methods course		3
Term Hours:		15

Senior year

Fall semester

PHIL 300	Philosophical Concepts	3
or	or Metaphysics	
PHIL 301	or Epistemology	
or	or Philosophy of Language	
PHIL 302	or Philosophy of Law	
or	or Normative Ethics	
PHIL 303	or Metaethics	
or	or Social and Political Philosophy	
PHIL 320		
or		
PHIL 327		
or		
PHIL 328		
or		
PHIL 335		
PHIL elective		3
Open electives		6
Scientific focus area upper-level course		3
Term Hours:		15
Spring semester		
PHIL 490	Seminar in Philosophy	3
Open electives		12
Term Hours:		15
Total Hours:		120-123

1

PHIL 201 satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Philosophy, minor in

A philosophy minor consists of 18 credits, including:

Course	Title	Hours
PHIL 103	Ancient Greek and Medieval Western Philosophy	3
or PHIL 104	Modern Western Philosophy	
Select two additional PHIL courses		6
Select at least nine credits in upper-level (300-400) courses		9
Total Hours		18

Philosophy of law, minor in

A minor in philosophy of law consists of 24 credits, to include:

Course	Title	Hours
PHIL 201	Introduction to Ethics	3
or PHIL 211	History of Ethics	
or PHIL 212	Ethics and Applications	
or PHIL 213	Ethics and Health Care	
or PHIL 214	Ethics and Business	
PHIL 221	Critical Thinking	3
or PHIL 222	Logic	
PHIL 320	Philosophy of Law	3

PHIL 327	Normative Ethics	3
or PHIL 328	Metaethics	
PHIL 335	Social and Political Philosophy	3
One additional PHIL course		3
Select two of the following:		6
HIST 408	Studies in Modern American History: ____ (when topic is American constitutional and legal development)	
POLI 313	U.S. Constitutional Law: Civil Rights and Civil Liberties	
POLI 314	U.S. Constitutional Law	
POLI 341	History of Political Theory: Classical to Modern	
POLI 342	History of Political Theory: Modern to Contemporary	
Total Hours		24

Department of Physics

Shiv Khanna, Ph.D.

Professor and chair

physics.vcu.edu (<http://www.physics.vcu.edu>)

The Department of Physics offers programs leading to the Bachelor of Science in Physics and the Master of Science in Physics and Applied Physics. The department also offers an accelerated B.S.-M.S. program that allows students in the baccalaureate program to take graduate courses that will count toward the M.S. in Physics and Applied Physics degree.

- Physics, Bachelor of Science (B.S.) (p. 245)
- Physics, Bachelor of Science (B.S.) with a concentration in nanoscience (p. 248)
- Physics, Bachelor of Science (B.S.) with a concentration in pre-medical (p. 250)
- Accelerated Bachelor of Science in Physics and Master of Science in Physics and Applied Physics (p. 251)
- Physics, minor in (p. 252)

Physics, Bachelor of Science (B.S.)

The Bachelor of Science in Physics requires a minimum of 120 credits, including 54 credits in physics and physics-related courses, as detailed in the course lists.

The curriculum in physics prepares students for technical careers in physics or an allied area, for careers in engineering and for the teaching of physics in secondary schools. The curriculum also prepares students for graduate studies in physics or a related area.

Student learning outcomes

Students will learn to perform scientific reasoning and complex problem-solving. Physics majors will receive a fundamental understanding of the main areas of physics so that they are prepared for jobs that use physics-based technologies. They are expected to have mastered the analytical approach to solving technical problems by identifying simple subsystems that obey known physical laws and using these laws to approximate the behavior of the whole system.

Students will demonstrate a fundamental understanding of the main areas of physics.

Students will demonstrate communication skills, both written and oral, needed to explain the analysis of technical problems.

Students will demonstrate scientific literacy skills including searching, reading and critically reviewing scientific publications.

Students will demonstrate proficiency in information processing by generating and interpreting data presented in tables, graphs, drawings and models.

Double major in engineering and physics

A detailed description of this program (p. 85) can be found in the "College of Engineering" section of this bulletin.

Degree requirements for Physics, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHYS 208	University Physics II	5
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
PHYS 340	Statistical Mechanics and Thermodynamics	3
PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
PHYS 450	Senior Physics Laboratory	3
PHYS 490	Seminar in Conceptual Physics	1
• Major electives		
Select a total of nine credits from the list of elective physics and physics-related courses provided below. Those students who have their primary major in physics are required to fulfill at least three of these credits using upper-level physics courses		9
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		

Select any course. 35-43

Total Hours 120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Physics and physics-related electives

Course	Title	Hours
Any of the following upper-level physics courses:		
PHYS 302	Classical Mechanics II	
PHYS 325	Visualization of Physics Using Mathematica	
PHYS 335	Experimental Skills for Physicists	
PHYS 351	Guided Inquiry for University Physics I	
PHYS 352	Guided Inquiry for University Physics II	
PHYS 377	Electromagnetism II	
PHYS 397	Directed Study (maximum of 3 credits)	
PHYS 420	Quantum Physics II	
PHYS 422	Optics	
PHYS 440	Introduction to Condensed Matter Physics	
PHYS 480	Particle Physics	
PHYS 483	Introduction to Astrophysics	
PHYS 491	Topics in Physics (maximum of 3 credits)	
PHYS 492	Independent Study (maximum of 3 credits)	
PHYS 514	Modeling Biocomplexity	
PHYS 522	Optics and Laser Physics	
PHYS 571	Theoretical Mechanics	
PHYS 573	Analytical Methods in Physics	
PHYS 576	Electromagnetic Theory	
PHYS 580	Quantum Mechanics	
PHYS 583	Geometrical Methods of Physics and Gravitation	
Any of the following math or statistics courses:		
MATH 310	Linear Algebra	
MATH 415	Numerical Methods	
MATH 433	Partial Differential Equations	
MATH 511	Applied Linear Algebra	
STAT 441	Applied Statistics for Engineers and Scientists	
Any of the following chemistry courses:		
CHEM 409	Instrumental Analysis	
CHEM 510	Atomic and Molecular Structure	
Any of the following engineering courses:		
CLSE 301	Transport Phenomena I	
CLSE 302	Transport Phenomena II	
EGMN 301	Fluid Mechanics	
EGMN 309	Material Science for Engineers	
EGMN 351	Nuclear Engineering Fundamentals	
EGMN 352	Nuclear Reactor Theory	

EGRB 427	Biomaterials
EGRE 303	Electronic Devices
EGRE 306	Introduction to Microelectronics
EGRE 307	Integrated Circuits
EGRE 310	Electromagnetic Fields and Waves
EGRE 334	Introduction to Microfabrication
EGRE 521	Advanced Semiconductor Devices

Those students intending to pursue graduate studies in physics should choose electives from the following:

Course	Title	Hours
PHYS 302	Classical Mechanics II	
PHYS 325	Visualization of Physics Using Mathematica	
PHYS 420	Quantum Physics II	
PHYS 440	Introduction to Condensed Matter Physics	
PHYS 480	Particle Physics	
PHYS 483	Introduction to Astrophysics	
PHYS 514	Modeling Biocomplexity	
PHYS 522	Optics and Laser Physics	
PHYS 571	Theoretical Mechanics	
PHYS 573	Analytical Methods in Physics	
PHYS 576	Electromagnetic Theory	
PHYS 580	Quantum Mechanics	
PHYS 583	Geometrical Methods of Physics and Gravitation	

Those interested in experimental physics should also take one or more credits in PHYS 397 or PHYS 492.

Courses not applicable toward the major

Course	Title	Hours
PHYS 101	Foundations of Physics	
PHYS 103	Elementary Astronomy	
PHYS 107	Wonders of Technology	
PHYS 201	General Physics I	
PHYS 202	General Physics II	
PHYS 215	Science, Technology and Society	
PHYS 291	Topics in Physical Science	
PHYS/MHIS 307	The Physics of Sound and Music	
PHYS/ENVS 315	Energy and the Environment	
PHYS 391	Topics in Physics	
PHYZ 101	Foundations of Physics Laboratory	
PHYZ 103	Elementary Astronomy Laboratory	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select AOI for diversities in the human experience)		3
Term Hours:		14-16
Spring semester		
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select BOK to complete breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)		3
Term Hours:		16
Sophomore year		
Fall semester		
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Term Hours:		15
Spring semester		
MATH 301	Differential Equations	3
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
Foreign language 102		3
Open elective		1-3
Term Hours:		14-16
Junior year		
Fall semester		
General education course (select BOK to complete breadth of knowledge requirement)		3
Major electives		6
Open electives		6
Term Hours:		15
Spring semester		

PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
Open electives		9
Term Hours:		15
Senior year		
Fall semester		
PHYS 340	Statistical Mechanics and Thermodynamics	3
Major elective		3
Open electives		9
Term Hours:		15
Spring semester		
PHYS 450	Senior Physics Laboratory	3
PHYS 490	Seminar in Conceptual Physics	1
Open electives (complete upper level if needed)		12
Term Hours:		16
Total Hours:		120-124

The minimum number of credit hours required for this degree is 120.

Physics, Bachelor of Science (B.S.) with a concentration in nanoscience

The Bachelor of Science in Physics with a concentration in nanoscience requires a minimum of 120 credits. The curriculum prepares students for careers in industry, academia, applied health or nanoscience-related areas. The curriculum also prepares students for graduate studies in nanoscience and related areas.

Student learning outcomes

Students will learn to perform scientific reasoning and complex problem-solving. Physics majors will receive a fundamental understanding of the main areas of physics so that they are prepared for jobs that use physics-based technologies. They are expected to have mastered the analytical approach to solving technical problems by identifying simple subsystems that obey known physical laws and using these laws to approximate the behavior of the whole system.

Students will demonstrate a fundamental understanding of the main areas of physics.

Students will demonstrate communication skills, both written and oral, needed to explain the analysis of technical problems.

Students will demonstrate scientific literacy skills including searching, reading and critically reviewing scientific publications.

Students will demonstrate proficiency in information processing by generating and interpreting data presented in tables, graphs, drawings and models.

Double major in engineering and physics

A detailed description of this program (p. 85) can be found in the "College of Engineering" section of this bulletin.

Students must complete 40-42 credits in physics and physics-related electives and 14-22 credits in ancillary requirements.

Degree requirements for Physics, Bachelor of Science (B.S.) with a concentration in nanoscience

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHYS 208	University Physics II	5
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYS 320	Modern Physics and Modern Physics Laboratory	4
PHYS 340	Statistical Mechanics and Thermodynamics	3
PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
PHYS 450	Senior Physics Laboratory	3
PHYS 490	Seminar in Conceptual Physics	1
• Concentration requirements		
PHYS 335	Experimental Skills for Physicists	3
PHYS 491	Topics in Physics (nanoscience)	3
PHYS 492	Independent Study (with NANO faculty)	3
Concentration electives		
Select two from:		6-8
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II (four credits)	
EGRE 334	Introduction to Microfabrication (four credits)	
NANO 570	Nanoscale Physics (three credits)	
PHYS 377	Electromagnetism II (three credits)	
PHYS 522	Optics and Laser Physics (three credits)	
PHYS 560	Fundamentals of Semiconductor Nanostructures (three credits)	
Ancillary requirements		
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6

Open electives	
Select any course.	26-36
Total Hours	120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Courses not applicable toward the major

Course	Title	Hours
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The following courses are not applicable toward the physics major requirements but may be used as general electives toward the bachelor's degree:

PHYS 101	Foundations of Physics	
PHYS 103	Elementary Astronomy	
PHYS 107	Wonders of Technology	
PHYS 201	General Physics I	
PHYS 202	General Physics II	
PHYS 215	Science, Technology and Society	
PHYS 291	Topics in Physical Science	
PHYS/MHIS 307	The Physics of Sound and Music	
PHYS/ENVS 315	Energy and the Environment	
PHYS 391	Topics in Physics	
PHYZ 101	Foundations of Physics Laboratory	
PHYZ 103	Elementary Astronomy Laboratory	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
Term Hours:		15-17
Spring semester		
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)		3
Term Hours:		16

Sophomore year

Fall semester		
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
Term Hours:		15

Spring semester

MATH 301	Differential Equations	3
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
Foreign language 102		3
Term Hours:		13

Junior year

Fall semester		
PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
General education course (select BOK to complete breadth of knowledge requirement AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		6-7
Term Hours:		15-16

Spring semester

PHYS 335	Experimental Skills for Physicists	3
PHYS 340	Statistical Mechanics and Thermodynamics	3
Open electives		9
Term Hours:		15

Senior year

Fall semester		
PHYS 397	Directed Study	3
PHYS 440	Introduction to Condensed Matter Physics	3
PHYS 450	Senior Physics Laboratory	3
PHYS 491	Topics in Physics (nanoscience)	3
Concentration elective		3-4
Term Hours:		15-16

Spring semester

PHYS 490	Seminar in Conceptual Physics	1
PHYS 492	Independent Study (with NANO adviser)	3
Concentration elective		3-4

Open elective (complete upper-level if needed)	9
Term Hours:	16-17
Total Hours:	120-125

The minimum number of credit hours required for this degree is 120.

Physics, Bachelor of Science (B.S.) with a concentration in pre-medical

The Bachelor of Science in Physics with a concentration in pre-medical requires a minimum of 120 credits. The curriculum prepares students for a health sciences career using physics-based technologies. Students from this program who apply to medical school will have a distinctively rigorous preparation. The curriculum also prepares students for graduate medical physics, biomedical engineering and M.D.-Ph.D. programs.

Student learning outcomes

Students will learn to perform scientific reasoning and complex problem-solving. Physics majors will receive a fundamental understanding of the main areas of physics so that they are prepared for jobs that use physics-based technologies. They are expected to have mastered the analytical approach to solving technical problems by identifying simple subsystems that obey known physical laws and using these laws to approximate the behavior of the whole system.

Students will demonstrate a fundamental understanding of the main areas of physics.

Students will demonstrate communication skills, both written and oral, needed to explain the analysis of technical problems.

Students will demonstrate scientific literacy skills including searching, reading and critically reviewing scientific publications.

Students will demonstrate proficiency in information processing by generating and interpreting data presented in tables, graphs, drawings and models.

Double major in engineering and physics

A detailed description of this program (p. 85) can be found in the "College of Engineering" section of this bulletin.

Students must complete 40 credits in physics and physics-related electives and 42 credits in ancillary requirements.

Degree requirements for Physics, Bachelor of Science (B.S.) with a concentration in premedical

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

• Major core requirements		
PHYS 208	University Physics II	5
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4

PHYS 340	Statistical Mechanics and Thermodynamics	3
PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
PHYS 440	Introduction to Condensed Matter Physics	3
PHYS 450	Senior Physics Laboratory	3
PHYS 490	Seminar in Conceptual Physics	1
• Concentration requirements		
PHYS 317	Preparing for the MCAT and Medical Sciences	3
PHYS 335	Experimental Skills for Physicists	3
PHYS 417	Topics in Biophysics	3
PHYS 591	Topics in Physics (with topic of bioanalytics and data science)	3

Ancillary requirements

BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (CHEM 101 satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5

Experiential fine arts ¹	1-3
Foreign language through the 102 level (by course or placement)	0-6

Open electives	
Select any course.	7-15

Total Hours	120
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1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	Experiential fine arts	1-3
Term Hours:		16-18

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
Term Hours:		17

Sophomore year

Fall semester		Hours
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		16

Spring semester

CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
MATH 301	Differential Equations	3
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
Term Hours:		15

Junior year

Fall semester		Hours
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5

PHYS 317	Preparing for the MCAT and Medical Sciences	3
PHYS 376	Electromagnetism I	3
PHYS 380	Quantum Physics I	3
	Foreign language 101	3

Term Hours: 17**Spring semester**

PHYS 335	Experimental Skills for Physicists	3
PHYS 340	Statistical Mechanics and Thermodynamics	3
	Foreign language 102	3
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3

Term Hours: 12**Senior year**

Fall semester		Hours
PHYS 417	Topics in Biophysics	3
PHYS 440	Introduction to Condensed Matter Physics	3
PHYS 450	Senior Physics Laboratory	3
	General education course (select BOK to complete breadth of knowledge requirement and AOI for diversities in the human experience)	3

Term Hours: 12**Spring semester**

PHYS 490	Seminar in Conceptual Physics	1
PHYS 591	Topics in Physics (with topic of bioanalytics and data science)	3
	General education course (select BOK to complete breadth of knowledge requirement and AOI for global perspectives)	3
	Open electives	8-9

Term Hours: 15-16**Total Hours: 120-123**

The minimum number of credit hours required for this degree is 120.

Accelerated Bachelor of Science (B.S.) in Physics and Master of Science (M.S.) in Physics and Applied Physics

Students who are enrolled in the Bachelor of Science in Physics program may elect to take graduate courses that will count toward the Master of Science in Physics and Applied Physics degree. Up to six hours of graduate credit may be earned in this way without any special provision. In order to offer more than six hours of pre-admission graduate credit toward the graduate degree, a student must apply to the physics department graduate admission committee for admission to the accelerated B.S.-M.S. program. Persons applying for admission to this program should (1) submit a curricular plan for completing the bachelor's degree within two years or its part-time equivalent; (2) indicate which graduate courses they intend to offer toward the physics master's degree; (3) have a minimum B average.

The M.S. degree completion form should be accompanied by a memo from the Department of Physics graduate admission committee to indicate which graduate courses were taken under the accelerated B.S.-

M.S. program. See the program page in the Graduate Bulletin (<http://bulletin.vcu.edu/graduate/college-humanities-sciences/physics/physics-applied-physics-ms-accelerated-physics-bs-masters/>) for additional information.

Physics, minor in

A minor in physics requires 20 credits consisting of the following courses:

Course	Title	Hours
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
Select an additional six credits of physics or physics-related courses that are acceptable for the major.		6
Total Hours		20

Department of Political Science

Jason Ross Arnold, Ph.D.

Associate professor and chair

Alexandra Reckendorf, Ph.D.

Assistant professor and associate chair

politicalscience.vcu.edu (<http://politicalscience.vcu.edu/>)

Political science is the systematic study of institutions, behavior and ideas in order to further the understanding and explanation of government and politics at the local, state, national and international levels. The discipline has a rich history that bridges the present with the past and future, is pluralistic in its modes of inquiry and adopts a critical approach that makes use of qualitative and quantitative analytic methods.

VCU's political science department uses its unique position on an urban campus — located in the state capital and just a short distance from Washington, D.C. — to provide students with transformative learning experiences promoting active and engaged citizenship, both domestically and globally. Faculty integrate their teaching with cutting-edge scholarship that advances the boundaries of the discipline and meaningfully impacts public debate and policy.

The department values diversity of thought and identity, inclusive pedagogy, informal mentorships, active citizenship and the free expression of ideas through innovative scholarship, teaching and community engagement. Faculty are dedicated to developing programs and a curriculum that prepare graduates to be informed and inquisitive citizens who are positioned to make a difference as professionals and lifelong learners.

These faculty members have expertise in a broad spectrum of subjects, including international health; Russian politics; U.S. presidential decision-making; national security and foreign policy; feminist political theory; women and politics, law and public policy; the politics of reproductive and genetic technologies; international relations; local economic development in the US; international relations and political theory; European politics and history; international political economy; public administration; constitutional law; information politics; comparative politics; American politics; public opinion and political behavior in the U.S.; democracy and development in Africa; political corruption;

non-governmental organizations; global environmental politics; climate change; politics of developing countries; state-building and democratization; public administration; international water rights; comparative public policy; immigration; labor politics; Latin American politics; legislative behavior; partisan gerrymandering; campaign finance; religion and politics; modern British and American political theory; political communication; political behavior; political leadership; black women in politics; state legislatures; international development and conflict; and political violence.

- Political Science, Bachelor of Arts (B.A.) with a concentration in:
 - Civil rights (p. 252)
 - Comparative politics (p. 255)
 - Human security (p. 258)
 - International relations (p. 262)
 - Political theory and methodology (p. 265)
 - Politics and government (p. 268)
 - Public policy and administration (p. 271)
 - U.S. government (p. 274)
- Nonprofit management and administration, minor in (p. 277)
- Political science, minor in (p. 277)
- Public management, minor in (p. 277)

Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing

Students will demonstrate skill in expository and analytic writing in the political science discipline

6. Political behavior

Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Concentration requirements		
Select courses from list below.		12
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

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Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select four civil rights concentration electives from the following:		12
POLI/AFAM 302	Politics of the Civil Rights Movement	
POLI 314	U.S. Constitutional Law	
POLI 315	Courts and Politics	
POLI/GSWS 316	Women and the Law	
POLI/AFAM/GSWS 318	Politics of Race, Class and Gender	
POLI/GSWS 319	Women and American Politics	
POLI/AFAM 343	Black Political Thought	
POLI/AFAM 345	African-American Politics	
POLI 372	Ethics, Law and Governance	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
POLI 103 U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
Experiential fine arts	1-3
Foreign language 101	3
General education course (select quantitative foundations)	3

Term Hours: 14-16

Spring semester

HUMS 202 Choices in a Consumer Society	1
POLI/INTL 105 International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
Foreign language 102	3
General education course (select AOI for scientific and logical reasoning)	3
Open elective	3

Term Hours: 16

Sophomore year**Fall semester**

POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	Open elective	3
Term Hours:		15

Spring semester

POLI 320	Research Methods in Political Science	3
	Concentration elective	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	Open electives	6
Term Hours:		15

Junior year**Fall semester**

POLI elective		3
	Concentration elective	3
	Open electives	9
Term Hours:		15

Spring semester

	Concentration elective	3
	General education course (select BOK to complete breadth of knowledge requirement)	3
	Open electives	9
Term Hours:		15

Senior year**Fall semester**

POLI 490	Senior Seminar	3
	Concentration elective	3
	Open electives	9
Term Hours:		15

Spring semester

	POLI elective	3
	Open electives	12
Term Hours:		15

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two

degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3

PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield

Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.

5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships, or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Concentration requirements		
Select courses from list below.		12
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6

Open electives

Select any course.	50-58
Total Hours	120
1	

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select four comparative politics concentration electives from the following:		
POLI/ENVS 311	Politics of the Environment	
POLI/AFAM/GSWS 318	Politics of Race, Class and Gender	
POLI/INTL 351	Governments and Politics of the Middle East	
POLI/INTL 352	European Governments and Politics	
POLI/INTL 353	Latin American Governments and Politics	
POLI/INTL 354	Russian and Post-Soviet Politics	
POLI/INTL 355	Asian Governments and Politics	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
POLI/INTL 358	Concepts of Comparative Government	
POLI 359	The Politics of Developing Areas	
POLI 360/INTL 480	China in Transition	
POLI 494	Political Science Mentorship	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3
Term Hours:		14-16
Spring semester		Hours
HUMS 202	Choices in a Consumer Society	1

POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open elective		3
Term Hours:		16
Sophomore year		
Fall semester		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open elective		3
Term Hours:		15
Spring semester		
POLI 320	Research Methods in Political Science	3
Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		6
Term Hours:		15
Junior year		
Fall semester		
POLI elective		3
Concentration elective		3
Open electives		9
Term Hours:		15
Spring semester		
Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		9
Term Hours:		15
Senior year		
Fall semester		
POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		9
Term Hours:		15
Spring semester		
POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the

undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3

PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in human security

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in human security

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Additional major requirements		
POLI 380	Human Security	3
• Concentration requirements		
Select courses from list below.		9
• Major electives		

POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

¹

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select four human security concentration electives from the following:		12
POLI/INTL 351	Governments and Politics of the Middle East	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
POLI 359/INTL 452	The Politics of Developing Areas	
POLI/INTL 362	International Organizations and Institutions	
POLI/GSWS 366/INTL 368	Women and Global Politics	
POLI 381	The Politics of Genocide and Human Rights	
POLI 382	International Health	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)
UNIV 101	Introduction to the University

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3
Term Hours:		14-16
Spring semester		
HUMS 202	Choices in a Consumer Society	1
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open elective		3
Term Hours:		16
Sophomore year		
Fall semester		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open elective		3
Term Hours:		15
Spring semester		
POLI 380	Human Security	3
POLI 320	Research Methods in Political Science	3
Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15
Junior year		
Fall semester		
POLI elective		3
Concentration elective		3
Open electives		9
Term Hours:		15
Spring semester		
Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3

Open electives	9	
Term Hours:		15
Senior year		
Fall semester		
POLI 490	Senior Seminar	3
Open electives		12
Term Hours:		15
Spring semester		
POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the “[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)” section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16

Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16

Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15

Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15

Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in international relations

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in international relations

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Concentration requirements		
Select courses from list below.		12
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select four international relations concentration electives from the following:		12
POLI/INTL 358	Concepts of Comparative Government	
POLI 359/ INTL 452	The Politics of Developing Areas	
POLI/INTL 361	Issues in World Politics	
POLI/INTL 362	International Organizations and Institutions	
POLI/INTL 363	U.S. Foreign Policy	
POLI/INTL 364	Vietnam	
POLI/INTL 365	International Political Economy	
POLI/GSWs 366/ INTL 368	Women and Global Politics	

POLI 367/ HSEP 301	Terrorism
POLI 368/ INTL 468	Comparative National Security Policy
POLI 369	U.S. National Security
POLI 382	International Health
POLI 494	Political Science Mentorship

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3
Term Hours:		14-16

Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		3
Term Hours:		16

Sophomore year

Fall semester		Hours
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		3
Term Hours:		15

Spring semester

POLI 320	Research Methods in Political Science	3
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Concentration electives	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Open electives	6
Term Hours:	15

Junior year

Fall semester		Hours
Concentration electives		3
Open electives		9
POLI elective		3
Term Hours:		15

Spring semester

Concentration elective	3	
General education course (select BOK to complete breadth of knowledge requirement)	3	
Open electives	9	
Term Hours:		15

Senior year

Fall semester		Hours
POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		9
Term Hours:		15

Spring semester

Open electives	12	
POLI electives	3	
Term Hours:		15
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3

Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3

PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an

A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Additional major requirements		
POLI 341	History of Political Theory: Classical to Modern	3
• Concentration requirements		
Select courses from list below.		9
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select four political theory and methodology concentration courses from the following:		12
POLI 314	U.S. Constitutional Law	
POLI/AFAM/ GSWS 318	Politics of Race, Class and Gender	
POLI/SOCY 320	Research Methods in Political Science	
POLI 342	History of Political Theory: Modern to Contemporary	
POLI/AFAM 343	Black Political Thought	
POLI 344	Contemporary Political Theory	
POLI/AFAM 345	African-American Politics	
POLI/INTL 358	Concepts of Comparative Government	
POLI/INTL 365	International Political Economy	
POLI 448	Scope and Method of Political Science	
POLI 494	Political Science Mentorship	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Course	Title	Hours
Fall semester		
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3
Term Hours:		14-16

Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		3
Term Hours:		16

Sophomore year

Fall semester		
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POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		3
Term Hours:		15

Spring semester

POLI 341	History of Political Theory: Classical to Modern	3
POLI 320	Research Methods in Political Science	3
Concentration electives		3
Open electives		6
Term Hours:		15

Junior year

Fall semester

General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		9
POLI elective		3
Term Hours:		15

Spring semester

Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		9
Term Hours:		15

Senior year

Fall semester

POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		9
Term Hours:		15

Spring semester

Open electives		12
POLI elective		3
Term Hours:		15

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two

degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3

PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield

Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.

5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Major electives		
POLI electives (select from 300 and 400 level)		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		

Select any course.	50-58
Total Hours	120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

	Hours
Fall semester	
POLI 103 U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
Experiential fine arts	1-3
Foreign language 101	3
General education course (select quantitative foundations)	3
Term Hours:	14-16

Spring semester

HUMS 202 Choices in a Consumer Society	1
POLI/INTL 105 International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
Foreign language 102	3
General education course (select AOI for scientific and logical reasoning)	3
Open electives	3
Term Hours:	16

Sophomore year

	Hours
Fall semester	
POLI 107 Political Theory	3
POLI 109 Comparative Politics	3
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
Open electives	3
Term Hours:	15

Spring semester

POLI 320 Research Methods in Political Science	3
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POLI electives	6
Open electives	6
Term Hours:	15

Junior year

	Hours
Fall semester	
General education course (select BOK to complete breadth of knowledge requirement)	3
Open electives	9
POLI elective	3
Term Hours:	15

Spring semester

General education course (select BOK to complete breadth of knowledge requirement)	3
Open electives	9
POLI elective	3
Term Hours:	15

Senior year

	Hours
Fall semester	
POLI 490 Senior Seminar	3
Open electives	9
POLI elective	3
Term Hours:	15
Spring semester	
Open electives	12
POLI elective	3
Term Hours:	15
Total Hours:	120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA

of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	

Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
	POLI elective	3
	Approved H&S General Education elective	3-4
	Open electives	9
	Term Hours:	15-16
Spring semester		
	POLI 490 Senior Seminar	3
	POLI elective	3
	Approved H&S General Education elective	3-4
	Open electives	6
	Term Hours:	15-16
Senior year		
Fall semester		
	PADM 601 Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
	PADM 602 Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
	POLI elective	3
	Open electives	6
	Term Hours:	15
Spring semester		
	PADM 607 Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3
	PADM 623 Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
	POLI elective	3
	Open electives	6
	Term Hours:	15
Fifth year		
Fall semester		
	PADM 609 Financial Management in Government	3
	PADM 624 Quantitative Methods for Public Administration	3
	PADM 625 Public Policy Analysis	3
	500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective	3
	Term Hours:	12

Spring semester

GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Additional major requirements		
POLI 310 or POLI 331	Public Policy Public Administration	3
• Concentration requirements		
Select courses from list below.		9
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Select three public policy and administration concentration electives from the following:		9
POLI 306	The Congress	
POLI 308	U.S. Presidency	
POLI 309	Bureaucratic Politics	
POLI 310	Public Policy	
POLI/ENVS 311	Politics of the Environment	
POLI 315	Courts and Politics	
POLI 321	Urban Politics	
POLI 322	State and Local Government and Politics	
POLI 323	Virginia Government and Politics	
POLI 329	Intergovernmental Relations	
POLI 331	Public Administration	
POLI 370	Foundations of Nonprofit Management	
POLI 372	Ethics, Law and Governance	
POLI 374	Financial Management for Nonprofits	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3
Term Hours:		14-16
Spring semester		Hours
HUMS 202	Choices in a Consumer Society	1
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		3
Term Hours:		16

Sophomore year

Fall semester		Hours
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		3
Term Hours:		15
Spring semester		Hours
POLI 310	Public Policy	3
or POLI 331	or Public Administration	
POLI 320	Research Methods in Political Science	3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		6
Term Hours:		15

Junior year

Fall semester		Hours
Concentration electives		3
Open electives		9
POLI electives		3
Term Hours:		15
Spring semester		Hours
Concentration elective		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		9
Term Hours:		15

Senior year

Fall semester		Hours
POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		9
Term Hours:		15
Spring semester		Hours
Open electives		12
POLI electives		3
Term Hours:		15
Total Hours:		120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public

sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program,

meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		
Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3

PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing

Students will demonstrate skill in expository and analytic writing in the political science discipline

6. Political behavior

Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 320	Research Methods in Political Science	3
POLI 490	Senior Seminar	3
• Concentration requirements		
Select courses from list below.		12
• Major electives		
POLI electives		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6

Open electives

Select any course.	50-58
Total Hours	120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
POLI 301	U.S. Parties and Elections	3
POLI/AFAM 302	Politics of the Civil Rights Movement	3
POLI 303	Public Opinion and Polling	3
POLI 304	Political Campaigns and Communication: New Hampshire Primary	3
POLI 305	Political Campaigns and Communication: Theory and Process	3
POLI 306	The Congress	3
POLI 308	U.S. Presidency	3
POLI 309	Bureaucratic Politics	3
POLI 310	Public Policy	3
POLI/ENVS 311	Politics of the Environment	3
POLI 314	U.S. Constitutional Law	3
POLI 315	Courts and Politics	3
POLI 316	Women and the Law	3
POLI/AFAM/GSWS 318	Politics of Race, Class and Gender	3
POLI/GSWS 319	Women and American Politics	3
POLI 320	Research Methods in Political Science	3
POLI 321	Urban Politics	3
POLI 322	State and Local Government and Politics	3
POLI 323	Virginia Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI 331	Public Administration	3
POLI/AFAM 345	African-American Politics	3
POLI/INTL 364	Vietnam	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3

Foreign language 101	3
General education course (select quantitative foundations)	3

Term Hours: 14-16

Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI/INTL 105	International Relations (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for scientific and logical reasoning)		3
Open electives		3

Term Hours: 16

Sophomore year

Fall semester

POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		3

Term Hours: 15

Spring semester

POLI 320	Research Methods in Political Science	3
Concentration electives		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		6

Term Hours: 15

Junior year

Fall semester

Concentration electives	3
Open electives	9
POLI elective	3

Term Hours: 15

Spring semester

Concentration elective	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Open electives	9

Term Hours: 15

Senior year

Fall semester

POLI 490	Senior Seminar	3
Concentration elective	3	
Open electives	9	

Term Hours: 15

Spring semester

Open electives	12
POLI elective	3
Term Hours:	15
Total Hours:	120-122

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.P.A.

The accelerated B.A. and M.P.A. program allows qualified students to earn both the B.A. in Political Science and the Master of Public Administration in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.P.A. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately. Students who do not have at least one year of professional-level experience in the public sector or in a nonprofit agency are required to earn three additional hours of credit in a public service practicum/internship. In this case, the two degrees may be earned with a minimum of 147 credits rather than the 159 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate knowledge about the assumptions, methods and analytical tools of the discipline of political science and current political and policy issues; and they will be prepared, professional public managers, public officials and citizens who are able to meet the challenges of public service in both government and nonprofit sectors and serve the profession and local, state, federal and international communities.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in political science courses; an overall GPA of 3.0; and a GPA of 3.3 in political science course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.P.A. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students who are interested in the accelerated program should consult with both a political science academic adviser and a graduate adviser to the M.P.A. program before they have completed 90 credits. To be considered for acceptance into the program and before enrolling in 600-level M.P.A. courses, students must complete the application to graduate study, submit standardized test scores and supply the supporting information required for admission.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate political science adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Political Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate public administration courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
PADM 601	Principles of Public Administration	3
PADM 602	Public Administration Theory	3
PADM 607	Public Human Resource Management	3
PADM 609	Financial Management in Government	3
PADM/GVPA/CRJS/ URSP 623	Research Methods for Government and Public Affairs	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration	3
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		9
Term Hours:		15-16
Spring semester		
POLI 490	Senior Seminar	3
POLI elective		3
Approved H&S General Education elective		3-4
Open electives		6
Term Hours:		15-16
Senior year		

Fall semester		
PADM 601	Principles of Public Administration (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 602	Public Administration Theory (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Spring semester		
PADM 607	Public Human Resource Management (may count for both undergraduate and graduate credits in accelerated program)	3
PADM 623	Research Methods for Government and Public Affairs (may count for both undergraduate and graduate credits in accelerated program)	3
POLI elective		3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
PADM 609	Financial Management in Government	3
PADM 624	Quantitative Methods for Public Administration	3
PADM 625	Public Policy Analysis	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP elective		3
Term Hours:		12
Spring semester		
GVPA 693	Internship	0-3
PADM 627	Workshop in Policy Analysis and Evaluation	3
PADM 689	Seminar in Public Administration: Integration of Theory and Practice	3
500- to 600-level PADM, CRJS, GVPA, HSEP or URSP electives		6
Term Hours:		12-15

Nonprofit management and administration, minor in

The minor in nonprofit management and administration is designed to introduce students to the history and current profile of American and international nonprofit and nongovernmental organizations as providers of public services and political actors in the national and international political environment. The minor also emphasizes basic knowledge and skills needed for professional work in the nonprofit sector as well as graduate study in public administration, law and public policy.

Minor requirements

The minor consists of 18 credits. All students must take the following courses:

Course	Title	Hours
POLI 370	Foundations of Nonprofit Management	3
POLI 372	Ethics, Law and Governance	3
POLI 374	Financial Management for Nonprofits	3
Select three of the following courses as electives:		9
MASC 210	Public Relations	
MGMT 331	Human Resource Management	
POLI 320	Research Methods in Political Science	
POLI 331	Public Administration	
POLI 493	Political Science Internship (see adviser)	
SLWK 230	Communication in the Helping Process	
SOCY 310	Social Movements and Social Conflict	
Total Hours		18

Political science, minor in

A minor in political science consists of 18 credits, including:

Course	Title	Hours
POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
Select at least three upper-level (300-400) credits in each of the following four main subfields of political science:		12
Comparative politics		
International relations		
Political theory and methodology		
U.S. government		
Total Hours		18

See a political science adviser for list of courses in each area. POLI 492, POLI 493 and POLI 494 cannot be used to fulfill the 12 upper-level credits. Approved courses for each subfield correspond to the concentration elective list of the same listed within the major requirements.

Public management, minor in

A minor in public management is designed for students who wish to prepare for a variety of employment opportunities in government and related fields. It provides an overview of public affairs at the national, state and local levels. Its emphasis is on acquainting students with the political context of public administration, issues of particular importance in the private sector, and the complexity of planning and decision-making. By emphasizing both professional skill and analytical thinking, it offers the possibility to develop valuable workplace skills and analytical capabilities that may qualify graduates for professional opportunities with local, state or federal agencies, and an ultimate career in the public sector. A public management minor also is solid preparation for graduate study in law, public administration, public policy and political science. Students in the minor may arrange an internship to provide experience and practical exposure to public management.

Minor requirements

The minor consists of 18 upper-level credits. All students must take the following courses:

Course	Title	Hours
POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 331	Public Administration	3
Select three of the following electives:		
POLI 309	Bureaucratic Politics	3
POLI 321	Urban Politics	3
POLI 323	Virginia Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI 344	Contemporary Political Theory	3
POLI 370	Foundations of Nonprofit Management	3
POLI 493	Political Science Internship (see adviser)	3
Total Hours		18

Department of Psychology

Michael Southam-Gerow, Ph.D.

Professor and chair

Terri Sullivan, Ph.D.

Professor and director of graduate studies

Linda E. Zyzniewski, Ph.D.

Professor and director of undergraduate studies

Lucy Hudson

Director of academic operations

LaToya Davis

Associate director of psychology advising and undergraduate academic operations

psychology.vcu.edu (<http://www.psychology.vcu.edu>)

In addition to the Bachelor of Science in Psychology, the Department of Psychology offers instruction in clinical, counseling, health and general psychology leading to the Doctor of Philosophy degree. Students in all doctoral degree programs are educated first as psychologists and then helped to develop competence in a more specialized area relevant to their scholarly and professional objectives. In addition, special training and experience in college teaching is available.

Honors in psychology

Psychology majors in the baccalaureate program can earn honors in psychology. Any student is eligible to join the program if he or she declares a major in psychology, meets one of the three following entrance requirements and joins the Honors College.

Entering freshmen must have combined SAT scores of at least 1910 and rank in the top 15 percent of their high school graduating class and present an unweighted 3.5 GPA (4.0 scale). Students transferring to VCU must have a 3.5 cumulative GPA in at least 30 college semester hours of credit and have no more than 60 college semester hours of credit. Continuing VCU students must have a 3.5 cumulative GPA and have taken a minimum of 20, but no more than 60, credits at VCU.

Once admitted to the program, the honors student must complete an honors thesis during a three-semester course sequence (PSYC 497, 498,

499), typically begun in their junior year, in which they propose, conduct and successfully defend their research.

A student in the program will graduate with honors in psychology if he or she has completed this three-course sequence with an A in each course, has maintained a GPA of 3.5, overall and in psychology, has had their thesis defense approved by members of the committee with no more than one negative vote and has completed all other requirements for the Bachelor of Science in Psychology.

Psychology advising (Psyugrad)

Students choose to major in psychology for many reasons. Most often they select the major from a combination of wanting to help other people and wanting to learn the scientific principles of behavior. Students in the program expect to receive career counseling and information on graduate and/or professional school training. The department has developed methods to meet these expectations.

Psyugrad has been established by the department to provide advising to undergraduate majors with educational and career planning. Students are shown how to choose appropriate electives for bachelor's-level careers in mental health services, personnel, management, corrections, rehabilitation, health services, education and laboratory research. In addition, all psychology majors are enrolled in PSYUGRAD, a Blackboard organization. PSYUGRAD provides up-to-date information on research opportunities, jobs, special presentations and advising documents.

The adviser's role is to consult with students about various areas of professional opportunity, explain the role of graduate education and suggest general areas of study outside of the psychology department that might fit the student's interests and goals. Advisers are available on a walk-in basis at the department's Psyugrad Advising Office located at the White House, 806 W. Franklin Street, Room 107. Hours are posted on PSYUGRAD Blackboard.

PSYC 492 and PSYC 494 are two of the upper-level electives specifically designed to enhance the psychology major's career pursuits for either employment or graduate-level training. Both of these courses provide opportunities for direct, practical experience with close supervision. Students may register for one, two or three credits following consultation with a faculty mentor who will supervise the experience. Students are expected to work three hours per week per credit hour for each of these experiences. They may be repeated for up to a total of 12 credits, but with no more than six credits of each.

The Department of Psychology offers service-learning courses (PSYC 307/LFSC 307; PSYC 493) that involve participation in an organized community service experience. Through classroom discussions and written assignments, students relate theories and research presented in class with community experiences. Through service-learning courses, students:

- Gain an understanding and appreciation of the community and its diverse people
- Explore an area of study or a career option
- Critically reflect on their values and responsibilities as citizens

In many cases, a service-learning course will meet the urban experience general education requirement (refer to the Schedule of Classes).

- Psychology, Bachelor of Science (B.S.) (p. 279)
- Psychology, Bachelor of Science (B.S.) with a concentration in:

- Addiction studies (p. 283)
- Applied psychology (p. 286)
- Life science (p. 288)
- Pre-graduate school (p. 291)
- Urban psychology (p. 293)
- Psychology, minor in (p. 295)

Psychology, Bachelor of Science (B.S.)

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**
The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.
- **Development of intellectual domain**
The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.
- **Development of affective and interpersonal domain**
Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- **Effective communication skills:** Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- **Critical evaluation skills:** Students will be proficient in evaluating psychological theory and research methods; thinking scientifically

about behavior and mental processes; and basing judgments on psychological theory and research.

- **Empirical research skills:** Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- **Ethical practices:** Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
Ancillary requirements		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Global Environmental Biology	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

For the standard curriculum, students must complete the psychology standard requirements, PSYC 451, at least one course from each of the following four domains or content areas, and at least three psychology electives.

Course	Title	Hours
Developmental		
PSYC 301	Child Psychology	3
PSYC 302	Psychology of Adolescence	3
PSYC 304	Life Span Developmental Psychology (cannot take both for credit toward a degree)	3
PSYC 306	Psychology of Adult Development	3
PSYC 307	Community Solutions: Multiple Perspectives	3
GRTY 510	Aging	3
Social/personality		
PSYC 309	Personality	3
PSYC 321	Social Psychology	3

PSYC/AFAM 322	Personality and Behavior of the African American	3	BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
PSYC 323	Interpersonal Relations	3	BIOL 103 or BIOL 201	Global Environmental Biology ¹ Human Biology	3-4
PSYC/RELS 333	Psychology and Religious Experience	3	BIOZ 101	Biological Concepts Laboratory	1
PSYC/GSWS 335	Psychology of Women	3	HUMS 202	Choices in a Consumer Society	1
PSYC/SOCY 341	Group Dynamics	3	PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human)	4
Physiological/learning			STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
PSYC 401	Physiological Psychology	3	Electives (upper level)		21
PSYC 406	Perception	3	Experiential fine arts ²		1-3
PSYC 410	Principles of Learning and Cognition	3	Foreign language through the 102 level (by course or placement)		0-6
Self-development/applied psychology			Open electives		
PSYC 303	Personal Adjustment	3	Select any course.		23-32
PSYC 308	Stress and its Management	3	Total Hours		120
PSYC 310	Industrial Psychology	3	1		
PSYC 318	Principles of Psychological Tests and Measurements	3	2		
PSYC 340	Introduction to the Helping Relationship	3	Course offered by the School of the Arts		
PSYC 407	Psychology of the Abnormal	3	The minimum number of credit hours required for this degree is 120.		
PSYC 412	Health Psychology	3	What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.		
PSYC 415	Psychological Theories of Addiction	3	Freshman year		
PSYC 416	Psychological Treatment of Addiction	3	Fall semester		
PSYC 426	Child Psychopathology	3	BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Students must achieve a minimum cumulative VCU GPA of 2.0 and also achieve a minimum GPA of 2.0 in the major in order to graduate.

Degree requirements for Psychology, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Additional major requirements		
Select at least one course from each of the domains listed above.		12
• Major electives		
PSYC electives (upper-level)		9
Ancillary requirements		

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Term Hours: 15

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for global perspectives)		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Open electives		6

Term Hours: 16

Sophomore year

Fall semester

BIOL 103 or BIOL 201	Global Environmental Biology ¹ or Human Biology ¹	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
Foreign language 101		3

Term Hours: 14-17

Spring semester

PSYC 317	Experimental Methods	3
PSYC elective (upper-level)		3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective (or select general education course that satisfies AOI for scientific and logical reasoning if BIOL 103 was not selected above)		3

Term Hours: 15

Junior year

Fall semester

Course in developmental domain		3
Course in social/personality domain		3
Elective (upper-level)		3
Open electives		6

Term Hours: 15

Spring semester

Course in physiological/learning domain		3
Course in self-development/applied psychology domain		3
PSYC elective (upper-level)		3
Open electives		6

Term Hours: 15

Senior year

Fall semester

PSYC 451	History of Psychology	3
PSYC elective (upper-level)		3
PSYC or other electives (upper-level)		6
Open elective		3

Term Hours: 15

Spring semester

PSYC or other elective (upper-level)		3
Electives (upper-level)		6
Open electives		6

Term Hours: 15

Total Hours: 120-123

¹

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.Ed.

The accelerated B.S. in Psychology and M.Ed. in Counselor Education program allows qualified students to earn both the B.S. in Psychology and M.Ed. in Counselor Education in six years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S and M.Ed. degrees. Thus, the two degrees may be earned with a minimum of 168 credits rather than the 180 credits necessary if the two degrees are pursued separately.

Students holding the undergraduate degree in psychology will have knowledge in human behavior, learning and cognition that provides a foundation for graduate study in counselor education. The counselor education program will provide students with research-based professional and clinical experiences necessary for effective counseling, supervision, teaching, advocacy and leadership in diverse settings. Program faculty will prepare students to become licensed school counselors, couples and family counselors, or counselors and student affairs professionals in higher education institutions.

Admission to the program

Minimum qualifications for admittance to the program include completion of 75 undergraduate credit hours, including at least one undergraduate CLED course; minimum undergraduate GPA of 3.0 or minimum cumulative GPA of 3.0 on the most recent 60 credits of course work. Successful applicants would enter the program in the fall semester of their senior year.

Students who are interested in the accelerated program should consult with both a psychology academic adviser and a graduate counselor education adviser before they have completed 75 credits. Undergraduate students must have psychology departmental approval (e.g., academic adviser, department chair) to participate in this accelerated program and also meet admission criteria of the M.Ed. in Counselor Education program prior to beginning their final year of full-time undergraduate study. These criteria include the following:

- Three letters of recommendation addressing the student's potential for graduate study in education (including at least one from a psychology faculty member)
- Current resume
- Statement of intent (consult with counselor education faculty)
- Transcripts of all previous college work
- Personal interview (to be scheduled after application is received)

Candidates should submit applications for admission immediately following the fall of their junior year, but no later than Jan. 15 of the same academic year. Students enrolled in the accelerated program must complete the accelerated graduate course work (CLED courses) in two semesters during their final year of the baccalaureate program. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study.

Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, with a minimum undergraduate GPA of 3.0 or minimum cumulative GPA of 3.0 on the most recent 60 credits of course work and minimum grades of B in all 600-level CLED courses, students are fully admitted to the master's program. To graduate with the M.Ed. in Counselor Education, students will meet graduation requirements of the degree as presented in the bulletin that is effective at the time of their full admission to the master's program.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Both the undergraduate psychology adviser and the graduate counselor education faculty adviser provide guidance to students admitted to the accelerated program.

Degree requirements

The Bachelor of Science in Psychology degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy major elective or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate counselor education (CLED) courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
CLED 600	Professional Orientation and Ethical Practice in Counseling	3
CLED 601	Theories of Counseling	3
CLED 605	Career Information and Exploration	3
CLED 612	Wellness Counseling	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
	Course in developmental domain	3
	Course in social/personality domain	3
	Elective (upper-level)	3
	Electives (upper- or lower-level)	6
	Term Hours:	15
Spring semester		
	Course in physiological/learning domain	3
	Course in self-development/applied psychology domain	3
	Elective (upper-level)	3
	Electives (upper- or lower-level)	6
	Term Hours:	15
Senior year		
Fall semester		
CLED 600	Professional Orientation and Ethical Practice in Counseling	3
CLED 601	Theories of Counseling	3
PSYC 451	History of Psychology	3
	Psychology elective (upper-level)	3
	Psychology or other elective (upper-level)	3
	Term Hours:	15
Spring semester		
CLED 605	Career Information and Exploration	3
CLED 612	Wellness Counseling	3
	Psychology or other elective (upper-level)	3
	Electives (upper- or lower-level)	5
	Term Hours:	14
See requirements for fifth and sixth years by concentration below.		

School counseling concentration

Course	Title	Hours
Fifth year		
Fall semester		
CLED 613	Data-driven Comprehensive School Counseling Programs	3
CLED 615	Lifespan Development: A Gender Perspective	3
EDUS 660	Research Methods in Education	3
	Term hours:	9
Spring semester		
CLED 602	Techniques of Counseling	3
CLED 603	Group Procedures in Counseling	3
CLED 607	Multicultural Counseling in Educational Settings	3
CLED 622	School Counseling Services	3
	Term Hours:	12
Summer semester		
CLED 640	Marriage, Couples and Family Counseling	3
CLED 650	Addiction Counseling	3

CLED 660	Mental Disorders, Diagnosis and Treatment Planning	3
Elective (chosen with approval of adviser)		3
Term Hours:		12

Sixth year

Fall semester		
CLED 604	Practicum: School Counseling	3
CLED 606	Assessment Techniques for Counselors	3
EDUS 673	Democracy, Equity and Ethics in Education	3
Term Hours:		9
Spring semester		
CLED 672	Internship	6
Term Hours:		6

College counseling and student affairs concentration

Course	Title	Hours
Fifth year		
Fall semester		
CLED 615	Lifespan Development: A Gender Perspective	3
CLED 620	Student Development Services in Higher Education	3
EDUS 660	Research Methods in Education	3
Term hours:		9
Spring semester		
CLED 602	Techniques of Counseling	3
CLED 603	Group Procedures in Counseling	3
CLED 607	Multicultural Counseling in Educational Settings	3
CLED 631	American College and University	3
Term Hours:		12
Summer semester		
CLED 640	Marriage, Couples and Family Counseling	3
CLED 650	Addiction Counseling	3
CLED 660	Mental Disorders, Diagnosis and Treatment Planning	3
Elective (chosen with approval of adviser)		3
Term Hours:		12
Sixth year		
Fall semester		
CLED 606	Assessment Techniques for Counselors	3
CLED 608	Practicum: College Student Development and Counseling	3
Elective (chosen with approval of adviser)		3
Term Hours:		9
Spring semester		
CLED 672	Internship	6
Term Hours:		6

Couples and family counseling concentration

Course	Title	Hours
Fifth year		
Fall semester		
CLED 615	Lifespan Development: A Gender Perspective	3
EDUS 660	Research Methods in Education	3
Elective (chosen with approval of adviser)		3
Term hours:		9
Spring semester		
CLED 602	Techniques of Counseling	3
CLED 603	Group Procedures in Counseling	3
CLED 607	Multicultural Counseling in Educational Settings	3
CLED 645	Couples Counseling	3
Term Hours:		12
Summer semester		
CLED 640	Marriage, Couples and Family Counseling	3
CLED 644	Sexuality Counseling	3
CLED 650	Addiction Counseling	3
CLED 660	Mental Disorders, Diagnosis and Treatment Planning	3
Term Hours:		12
Sixth year		
Fall semester		
CLED 606	Assessment Techniques for Counselors	3
CLED 609	Couples and Family Counseling Practicum	3
CLED 641	Advanced Family Counseling	3
Term Hours:		9
Spring semester		
CLED 672	Internship	6
Term Hours:		6

Psychology, Bachelor of Science (B.S.) with a concentration in addiction studies

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions – scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

- **Development of intellectual domain**

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

- **Development of affective and interpersonal domain**

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- Effective communication skills: Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- Critical evaluation skills: Students will be proficient in evaluating psychological theory and research methods; thinking scientifically about behavior and mental processes; and basing judgments on psychological theory and research.
- Empirical research skills: Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- Ethical practices: Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

Ancillary requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Global Environmental Biology	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

For the addiction studies concentration, students must complete the psychology standard requirements, PSYC 415, PSYC 416, PSYC 451 and PSYC 493 and at least one course from each of the developmental, social/personality and physiological/learning domains or content areas.

Course	Title	Hours
Developmental		
GRTY 510	Aging	3
PSYC 301	Child Psychology	3
PSYC 302	Psychology of Adolescence	3
PSYC 304	Life Span Developmental Psychology (cannot take both for credit toward a degree)	3
PSYC 306	Psychology of Adult Development	3
PSYC 307	Community Solutions: Multiple Perspectives	3
Social/personality		
PSYC 309	Personality	3
PSYC 321	Social Psychology	3
PSYC/AFAM 322	Personality and Behavior of the African American	3
PSYC 323	Interpersonal Relations	3
PSYC/RELS 333	Psychology and Religious Experience	3
PSYC/GSWS 335	Psychology of Women	3
PSYC/SOCY 341	Group Dynamics	3
Physiological/learning		
PSYC 401	Physiological Psychology	3
PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Students must achieve a minimum cumulative VCU GPA of 2.0 and also achieve a minimum GPA of 2.0 in the major in order to graduate.

Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in addiction studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Additional major requirements		
Developmental domain course		3
Social/personality domain course		3
Physiological/learning domain course		3
• Concentration requirements		
PSYC 415	Psychological Theories of Addiction	3
PSYC 416	Psychological Treatment of Addiction	3
PSYC 493	Fieldwork: Human Services	3
• Major electives		
PSYC electives		3
Ancillary requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOL 103 or BIOL 201	Global Environmental Biology ¹ Human Biology	3-4
BIOZ 101	Biological Concepts Laboratory	1
HUMS 202	Choices in a Consumer Society	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Electives (upper level)		21
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		23-32
Total Hours		120

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Freshman year		
Fall semester		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for global perspectives)		3
Open electives		6
Term Hours:		16
Sophomore year		
Fall semester		Hours
BIOL 103 or BIOL 201	Global Environmental Biology ¹ or Human Biology ¹	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
Foreign language 101		3
Term Hours:		14-17
Spring semester		
PSYC 317	Experimental Methods	3
PSYC elective (upper-level)		3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3

Open elective (or select general education course that satisfies AOI for scientific and logical reasoning if BIOL 103 was not selected above)

Term Hours: 15

Junior year

Fall semester

Course in developmental domain	3
Course in social/personality domain	3
Elective (upper-level)	3
Open electives	6

Term Hours: 15

Spring semester

PSYC 415 Psychological Theories of Addiction	3
Course in physiological/learning domain	3
Elective (upper-level)	3
Open electives	6

Term Hours: 15

Senior year

Fall semester

PSYC 416 Psychological Treatment of Addiction	3
PSYC 451 History of Psychology	3
PSYC 493 Fieldwork: Human Services	3
PSYC or other elective (upper-level)	3
Open elective	3

Term Hours: 15

Spring semester

PSYC or other elective (upper-level)	3
Electives (upper-level)	6
Open electives	6

Term Hours: 15

Total Hours: 120-123

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one

3 of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

• Understanding of content domain

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

• Development of intellectual domain

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

• Development of affective and interpersonal domain

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- Effective communication skills: Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- Critical evaluation skills: Students will be proficient in evaluating psychological theory and research methods; thinking scientifically about behavior and mental processes; and basing judgments on psychological theory and research.
- Empirical research skills: Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- Ethical practices: Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
Ancillary requirements		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Global Environmental Biology	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the applied psychology concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 30 credit hours in the major.

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Concentration requirements		
PSYC 304	Life Span Developmental Psychology	3
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 340	Introduction to the Helping Relationship	3
PSYC 407	Psychology of the Abnormal	3
PSYC 492	Independent Study	3
or PSYC 493	Fieldwork: Human Services	
or PSYC 494	Research Internship in Psychology	

• Major electives		
PSYC elective (upper-level)		3
Ancillary requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOL 103 or BIOL 201	Global Environmental Biology ¹ Human Biology	3-4
BIOZ 101	Biological Concepts Laboratory	1
HUMS 202	Choices in a Consumer Society	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/ behavioral sciences and AOI for diversities in the human)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Electives (upper level)		18
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		23-32
Total Hours		120

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/ behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		15
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for global perspectives)		3
Open electives		6
Term Hours:		16
Sophomore year		
Fall semester		
BIOL 103 or BIOL 201	Global Environmental Biology ¹ or Human Biology ¹	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
Foreign language 101		3
Term Hours:		14-17
Spring semester		
PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective (or select general education course that satisfies AOI for scientific and logical reasoning if BIOL 103 was not selected above)		3
Term Hours:		15
Junior year		
Fall semester		
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
Elective (upper-level)		3
Open electives		6
Term Hours:		15
Spring semester		
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 340	Introduction to the Helping Relationship	3
Elective (upper-level)		3

Open electives		6
Term Hours:		15
Senior year		
Fall semester		
PSYC 407	Psychology of the Abnormal	3
PSYC 451	History of Psychology	3
PSYC 492	Independent Study	3
or		
PSYC 493	or Fieldwork: Human Services or Research Internship in Psychology	
or		
PSYC 494		
PSYC or other elective (upper-level)		3
Open elective		3
Term Hours:		15
Spring semester		
PSYC or other elective (upper-level)		3
Electives (upper-level)		6
Open electives		6
Term Hours:		15
Total Hours:		120-123

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Psychology, Bachelor of Science (B.S.) with a concentration in life science

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions – scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

- **Development of intellectual domain**

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

- **Development of affective and interpersonal domain**

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- Effective communication skills: Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- Critical evaluation skills: Students will be proficient in evaluating psychological theory and research methods; thinking scientifically about behavior and mental processes; and basing judgments on psychological theory and research.
- Empirical research skills: Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- Ethical practices: Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
Ancillary requirements		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3
BIOL 201	Human Biology	

Or an approved biology course

STAT 210	Basic Practice of Statistics	3
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This information outlines the requirements for students who are admitted and pursuing the life science concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 34 credit hours in the major.

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in life science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Concentration requirements		
BIOL 201	Human Biology	3
BIOL 445	Neurobiology and Behavior	4
PHTX 400	Drugs and Their Actions	3
PSYC 401	Physiological Psychology	3
PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3
PSYC 412	Health Psychology	3
PSYC 492	Independent Study	3
or PSYC 493	Fieldwork: Human Services	
or PSYC 494	Research Internship in Psychology	
Ancillary requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
HUMS 202	Choices in a Consumer Society	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Electives (upper level)		18

Experiential fine arts ¹	1-3
Foreign language through the 102 level (by course or placement)	0-6
Open electives	
Select any course.	26-34
Total Hours	120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for global perspectives)		3
Open electives		6
Term Hours:		16

Sophomore year

Fall semester

BIOL 201	Human Biology	3
HUMS 291	Special Topics in the Humanities and Sciences	1

PSYC 214	Applications of Statistics (Note prerequisite is STAT 210 with a minimum grade of C.)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
Foreign language 101		3

Term Hours: 14-16

Spring semester

PSYC 317	Experimental Methods	3
PSYC 401	Physiological Psychology	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course		3

Term Hours: 15

Junior year

Fall semester

PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3
Elective (upper-level)		3
Open electives		6

Term Hours: 15

Spring semester

BIOL 445	Neurobiology and Behavior	4
PSYC 412	Health Psychology	3
Elective (upper-level)		3
Open electives		5

Term Hours: 15

Senior year

Fall semester

PHTX 400	Drugs and Their Actions	3
PSYC 451	History of Psychology	3
PSYC 492	Independent Study	3
or	or Fieldwork: Human Services	
PSYC 493	or Research Internship in Psychology	
or	PSYC 494	

PSYC or other elective (upper-level)		3
Open elective		3

Term Hours: 15

Spring semester

PSYC or other elective (upper-level)		3
Electives (upper-level)		6
Open electives		6

Term Hours: 15

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**
The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.
- **Development of intellectual domain**
The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.
- **Development of affective and interpersonal domain**
Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- **Effective communication skills:** Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- **Critical evaluation skills:** Students will be proficient in evaluating psychological theory and research methods; thinking scientifically about behavior and mental processes; and basing judgments on psychological theory and research.

- **Empirical research skills:** Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- **Ethical practices:** Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
Ancillary requirements		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Global Environmental Biology	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the pre-graduate school concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 3.25 and also achieve a minimum GPA of 3.25 in the major. This concentration requires 30 credit hours in the major.

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Concentration requirements		
PSYC 304	Life Span Developmental Psychology	3
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 321	Social Psychology	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 410	Principles of Learning and Cognition	3
PSYC 492	Independent Study	3
or PSYC 493	Fieldwork: Human Services	
or PSYC 494	Research Internship in Psychology	
Ancillary requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOL 103 or BIOL 201	Global Environmental Biology ¹ Human Biology	3-4
BIOZ 101	Biological Concepts Laboratory	1
HUMS 202	Choices in a Consumer Society	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Electives (upper level)		18
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		26-35
Total Hours		120

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
	General education course (select AOI for global perspectives)	3
	Open electives	6
Term Hours:		16
Sophomore year		
Fall semester		
BIOL 103 or BIOL 201	Global Environmental Biology ¹ or Human Biology ¹	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Experiential fine arts	1-3
	Foreign language 101	3
Term Hours:		14-17
Spring semester		
PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
	Foreign language 102	3
	General education course (select BOK to complete breadth of knowledge requirement)	3

Open elective (or select general education course that satisfies AOI for scientific and logical reasoning if BIOL 103 was not selected above) 3

Term Hours: 15

Junior year

Fall semester

PSYC 318 Principles of Psychological Tests and Measurements 3

PSYC 321 Social Psychology 3

Elective (upper-level) 3

Open electives 6

Term Hours: 15

Spring semester

PSYC 401 Physiological Psychology 3

PSYC 407 Psychology of the Abnormal 3

Elective (upper-level) 3

Open electives 6

Term Hours: 15

Senior year

Fall semester

PSYC 410 Principles of Learning and Cognition 3

PSYC 451 History of Psychology 3

PSYC 492 Independent Study 3

or Fieldwork: Human Services

PSYC 493 or Research Internship in Psychology

or

PSYC 494

PSYC or other elective (upper-level) 3

Open elective 3

Term Hours: 15

Spring semester

PSYC or other elective (upper-level) 3

Electives (upper-level) 6

Open electives 6

Term Hours: 15

Total Hours: 120-123

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum

by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

Program outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

- **Development of intellectual domain**

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

- **Development of affective and interpersonal domain**

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

Student learning outcomes

I. Communication and professional development

- Effective communication skills: Students will be able to communicate psychological theory and research to a range of audiences in oral and written formats in the capstone course.

II. Development of intellectual domain

- Critical evaluation skills: Students will be proficient in evaluating psychological theory and research methods; thinking scientifically about behavior and mental processes; and basing judgments on psychological theory and research.
- Empirical research skills: Students will demonstrate proficiency in applying methodological knowledge in measurement, experimental design and analysis of psychological data.

III. Ethical responsibility in a diverse world

- Ethical practices: Students will demonstrate an understanding of ethical issues in psychological research and practice.

Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of

the 30 minimum-required credits must be completed at VCU. All students must complete the following:

Course	Title	Hours
Psychology standard requirements		
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
Ancillary requirements		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Global Environmental Biology	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the urban psychology concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 33 credit hours in the major.

Standard psychology courses must be taken sequentially and ideally should be completed by the end of the junior year. These courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology	3
• Concentration requirements		
POLI 321	Urban Politics	3
PSYC 302	Psychology of Adolescence	3
PSYC 304	Life Span Developmental Psychology	3
PSYC/AFAM 322	Personality and Behavior of the African American	3
PSYC 340	Introduction to the Helping Relationship	3
PSYC 493	Fieldwork: Human Services	3

or PSYC 494	Research Internship in Psychology	
RELS 340/INTL 341	Global Ethics and the World's Religions	3
URSP 116	Introduction to the City	3

Ancillary requirements

BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOL 103	Global Environmental Biology ¹	3-4
or BIOL 201	Human Biology	
BIOZ 101	Biological Concepts Laboratory	1
HUMS 202	Choices in a Consumer Society	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Electives (upper level)		18
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		23-32

Total Hours **120**

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Term Hours: 15

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for global perspectives)		3
Open electives		6

Term Hours: 16

Sophomore year

Fall semester

BIOL 103 or BIOL 201	Global Environmental Biology ¹ or Human Biology ¹	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics (Note prerequisite is STAT 210 with a minimum grade of C.)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Experiential fine arts		1-3
Foreign language 101		3

Term Hours: 14-17

Spring semester

PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective (or select general education course that satisfies AOI for scientific and logical reasoning if BIOL 103 was not selected above)		3

Term Hours: 15

Junior year

Fall semester

PSYC 302	Psychology of Adolescence	3
PSYC 322	Personality and Behavior of the African American	3
Elective (upper-level)		3
Open electives		6

Term Hours: 15

Spring semester

POLI 321	Urban Politics	3
PSYC 340	Introduction to the Helping Relationship	3

Elective (upper-level)	3
Open electives	6

Term Hours: 15

Senior year

Fall semester

RELS 340/ INTL 341	Global Ethics and the World's Religions	3
PSYC 451	History of Psychology	3
PSYC 493 or PSYC 494	Fieldwork: Human Services or Research Internship in Psychology	3
URSP 116	Introduction to the City	3
Elective (upper-level)		3

Term Hours: 15

Spring semester

PSYC or other elective (upper-level)	3
Electives (upper-level)	6
Open electives	6

Term Hours: 15

Total Hours: 120-123

1

BIOL 103 satisfies general education AOI for scientific and logical reasoning. Students who chose this course will take additional electives to fulfill degree requirements.

The minimum number of credit hours required for this degree is 120.

Psychology, minor in

A minor in psychology consists of 18 credits in psychology, including:

Course	Title	Hours
PSYC 101	Play Introduction to Psychology course video for Introduction to Psychology	4
Select one course from each of the four basic areas:		11
Developmental		
Social/personality		
Physiological/learning		
Self-development/applied psychology		
Select one additional PSYC course ¹		3
Total Hours		18

1

PSYC 201 cannot be used to meet this requirement.

At least nine of the 18 credits must be taken at VCU.

Department of Sociology

Susan Bodnar-Deren, Ph.D.

Associate professor and chair

sociology.vcu.edu (<http://www.sociology.vcu.edu>)

The sociology department at VCU provides an engaged, learner-centered experience for our undergraduate and graduate students through active involvement in faculty research and community development. Through cutting-edge research, excellent undergraduate and graduate teaching focused on critical thinking, exciting applied opportunities, vital service and community outreach both nationally and internationally, and preparation of students for a wide range of jobs, sociology plays a central role in quality liberal arts education. Sociology is a “social science”; it is a discipline grounded in using sociological theory and the scientific method to create the knowledge necessary for understanding and improving social life. Using theory as a foundation for analysis, sociologists collect and analyze empirical data useful in making decisions related to public life, such as social and economic policy, and private life, such as family and interpersonal health. It is this relationship between sociological theory, as the foundation of critical thinking, and the scientific method, as the guiding principles of analysis, which makes sociology a rapidly expanding field with expertise increasingly sought after by those who craft policies and create programs.

The Department of Sociology offers a Bachelor of Science in Sociology at the undergraduate level, as well as a Master of Science at the graduate level.

- Sociology, Bachelor of Science (B.S.) (p. 296)
- Sociology, minor in (p. 298)

Sociology, Bachelor of Science (B.S.)

The Bachelor of Science in Sociology requires a minimum of 120 credits, with at least 33 of those credits in sociology and other approved courses. The baccalaureate curriculum in sociology seeks to ensure that each student develops a solid foundation in the basic principles, theories and techniques of analysis in sociology. It also encourages students to pursue an interdisciplinary approach by incorporating course credit from closely related subject areas in other programs. Since students majoring in sociology vary in their interests and career goals, the curriculum allows for a great deal of flexibility in developing individual courses of study. Students who are interested in pursuing graduate studies in sociology usually will take more than the minimum number of upper-level courses. The program provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships and honors research.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Understand sociological theory
Students will demonstrate an ability to apply different theoretical perspectives to social issues as well as compare and contrast basic theoretical orientations.
- Understand sociological concepts
Students will demonstrate knowledge of basic concepts in sociology, such that students will be able to define, give examples and demonstrate the relevance of culture, social structure, institutions, socialization, stratification, social change and differentiations by race/ethnicity, gender, sexuality, age and class.
- Understand sociological research and analysis
Students will demonstrate knowledge of basic methodological approaches (both quantitative and qualitative) in sociology and the general role of methodology in building sociological knowledge.

Students will know how to retrieve data sets from the Internet, read and produce descriptive statistics, and work with data analysis software, such as SPSS.

Degree requirements for Sociology, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements ¹		
SOCY 202	Foundations of Theory	3
SOCY 320	Research Methods in the Social Sciences	3
SOCY 402	Contemporary Theory	3
SOCY 406	Sociology Senior Seminar	3
• Major electives		
Select SOCY courses (300- to 400-level) ²		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3
Experiential fine arts ³		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		50-58
Total Hours		120

The minimum number of credit hours required for this degree is 120.

1

A minimum grade of C is required in each course.

2

Students have an option of completing three elective credits chosen from any 300- or 400-level SOCS course.

3

Course offered by the School of the Arts.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
MATH 131 Introduction to Contemporary Mathematics (or open elective if placed out of MATH 131)	3

UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
General education course (select AOI for global perspectives)		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3

Term Hours: 14-16

Spring semester

HUMS 202	Choices in a Consumer Society	1
SOCY 101	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
Play course video for Introduction to Sociology		
STAT 210	Basic Practice of Statistics (satisfies general education quantitative foundations)	3

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for scientific and logical reasoning)		3
Open elective		3

Term Hours: 16

Sophomore year

Fall semester

SOCY 202	Foundations of Theory	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3

Term Hours: 15

Spring semester

SOCY 320	Research Methods in the Social Sciences	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Major elective (300-level)		3
Open elective		3

Term Hours: 15

Junior year

Fall semester

Major elective (300-level)		3
Major electives (300- to 400-level, except SOCY 402 or SOCY 406)		6

Open electives (upper-level preferred, may take additional SOCY electives)	6
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Term Hours: 15

Spring semester

Major electives (300- to 400-level)	6
Open electives (upper-level preferred, may take additional SOCY electives)	9

Term Hours: 15

Senior year

Fall semester

SOCY 402	Contemporary Theory	3
Open electives (upper-level preferred, may take additional SOCY electives)		12

Term Hours: 15

Spring semester

SOCY 406	Sociology Senior Seminar	3
Open electives (upper-level preferred, may take additional SOCY electives)		12

Term Hours: 15

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Sociology in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have the strong analytical and methodological skills that prepare them for future academic and/or professional work. Using both theory and methods, students will develop a sociological imagination central to the critical analysis of modern social problems. The program will also provide students with opportunities to participate in research projects, internships and other training programs where they develop the skills to evaluate, refine and apply what they learn in the classroom.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including a minimum of nine credit hours in sociology courses; an overall GPA of 3.0; and a GPA of 3.3 in sociology course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.) Prior to being formally considered for admission and before enrolling in graduate courses, the student must complete the graduate school application, submit GRE general aptitude scores and supply supporting information required for admission.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.S. program admission deadline. The entry term for the master's program will be the next available admission term following the last semester of

undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Three reference letters (at least one from a sociology faculty member) must accompany the application. The director of graduate studies for the sociology master's program will provide guidance of students in this program. Students who are interested in this program should consult with the director of graduate studies or the director of undergraduate studies before they have completed 90 credits. Both directors may be contacted for more information about admission procedures.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate sociology adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Sociology degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate sociology courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
SOCY 502	Contemporary Sociological Theory	3
SOCY/STAT 508	Introduction to Social Statistics	3
SOCY 601	Sociological Research Methods	3
SOCY/STAT 608	Statistics for Social Research	3

Other SOCY graduate courses, with the approval of the director of graduate studies, may serve as an elective requirement for the M.S. degree and an elective for the undergraduate major

Total Hours **12**

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
300-level SOCY elective		3
300- to 400-level SOCY electives (except SOCY 402 or SOCY 406)		6

Open electives (upper-level preferred, may take additional SOCY electives) 7

Term Hours: 16

Spring semester

300- to 400-level SOCY electives or approved SOCY or SOCS electives 6

Open electives (upper-level preferred, may take additional SOCY electives) 9

Term Hours: 15

Senior year

Fall semester

SOCY 502 Contemporary Sociological Theory (may count for both undergraduate and graduate credits in accelerated program) 3

SOCY/STAT 508 Introduction to Social Statistics (may count for both undergraduate and graduate credits in accelerated program) 3

Open electives (upper-level preferred, may take additional SOCY electives) 9

Term Hours: 15

Spring semester

SOCY 406 Sociology Senior Seminar 3

SOCY 601 Sociological Research Methods (may count for both undergraduate and graduate credits in accelerated program) 3

SOCY/STAT 608 Statistics for Social Research (may count for both undergraduate and graduate credits in accelerated program) 3

Open electives (upper-level preferred, may take additional SOCY electives) 6

Term Hours: 15

Fifth year

Fall semester

SOCY 602 Applications of Sociological Research Methods 3

SOCY 699 Seminar in Sociological Practice 3

500- to 600-level SOCY electives 6

Term Hours: 12

Spring semester

SOCY 699 Seminar in Sociological Practice 3

500- to 600-level SOCY electives 6

Term Hours: 12

Sociology, minor in

A sociology minor consists of 18 credits including:

Course	Title	Hours
SOCY 101 Play course video for Introduction to Sociology		3

SOCY 202	Foundations of Theory	3
Select 12 additional credits in upper-level (300-400) sociology courses ¹		12
Total Hours		18

1

Students have an option of completing three elective credits chosen from any 300- or 400-level SOCS course.

Department of Statistical Sciences and Operations Research

D'Arcy P. Mays III, Ph.D.

Associate professor and chair

ssor.vcu.edu (<https://ssor.vcu.edu/>)

The Department of Statistical Sciences and Operations Research offers programs leading to a Bachelor of Science in Mathematical Sciences, a Master of Science in Mathematical Sciences with a concentration in either operations research or statistics and a Doctor of Philosophy in Systems Modeling and Analysis. The curriculum of the programs is run jointly with the Department of Mathematics and Applied Mathematics (p. 219).

The department also offers a post-baccalaureate undergraduate Certificate in Statistics and a graduate Certificate in Applied Statistics.

- Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research (p. 299)
- Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics (p. 303)
- Statistics, minor in (p. 307)
- Statistics, Certificate in (Post-baccalaureate undergraduate certificate) (p. 307)

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Statistical Sciences and Operations Research, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of operations research, which focuses on modern mathematical techniques

for solving problems arising from other fields, such as engineering, business or economics.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply theories of mathematical programming
- Perform stochastic models and decision analysis
- Obtain, analyze and interpret data
- Use commonly used operations research software
- Identify and apply operations research models
- Develop understanding of mathematics
- Communicate technical information orally and in writing

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 300	Introduction to Mathematical Reasoning ¹	3

SSOR 490	Developing Professional Skills in Operations Research and Statistics ¹	3
SSOR 495	Expositions in Statistical Sciences and Operations Research ¹	1
STAT 309	Introduction to Probability Theory ¹	3
• Concentration requirements		
MATH 401 or MATH 407 or MATH 409	Introduction to Abstract Algebra ¹ Advanced Calculus General Topology	3
OPER 327	Mathematical Modeling ¹	3
OPER 427	Deterministic Operations Research ¹	3
OPER 428	Stochastic Operations Research ¹	3
STAT 403	Introduction to Stochastic Processes ¹	3
Select one of the following computing sequences:		6-7
CMSC 245 & CMSC 246	Introduction to Programming Using C++ and Advanced Programming Using C++	
CMSC 255 & CMSC 256	Introduction to Programming and Data Structures and Object Oriented Programming	
EGRE 245 & EGRE 246	Engineering Programming and Advanced Engineering Programming	
Concentration electives		
Select from concentration electives below.		9-12
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I ¹	4
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		8-10
Natural science elective (different from chosen science sequence)		3-5
Open electives		
Select any course.		9-25
Total Hours		120

¹

These courses/credits require a minimum grade of C.

²

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences:		
Sequence 1		

BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5

Electives

For the operations research concentration, three electives must be chosen from the following list:

Course	Title	Hours
CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 391	Topics in Computer Science ¹	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
INFO 364	Database Systems	3
MATH 301	Differential Equations	3
MATH 305	Elementary Number Theory	3
MATH/BNFO 380	Introduction to Mathematical Biology	4
MATH 391	Topics in Mathematics ¹	1-3
MATH 401	Introduction to Abstract Algebra	3
MATH 407	Advanced Calculus	3
MATH 409	General Topology	3
MATH 432	Ordinary Differential Equations	3
MATH 433	Partial Differential Equations	3
MATH 434	Discrete Dynamical Systems	3
MATH 507	Bridge to Modern Analysis	3
MATH 511	Applied Linear Algebra	3
MATH 515	Numerical Analysis	3
OPER 591	Topics in Operations Research ¹	1-3

SSOR 492	Independent Study ¹	2-4
STAT 305	Intermediate Statistics ²	3
STAT 310	Introduction to Statistical Inference	3
STAT 314	Applications of Statistics ²	4
STAT 321	Introduction to Statistical Computing	3
STAT 391	Topics in Statistics ¹	3
STAT 415	Statistical Consulting	3
STAT 421	Applied Statistical Computing Using R	3
STAT 422	Structured Problem Solving Using Statistics	3
STAT 423	Nonparametric Statistics	3
STAT 425	Multivariate Statistics	3
STAT 435	Industrial Statistics	3
STAT 441	Applied Statistics for Engineers and Scientists ³	3
STAT 443	Regression	3
STAT 475	Time Series	3
STAT/BIOS 513	Mathematical Statistics I	3
STAT/BIOS 514	Mathematical Statistics II	3
STAT 544	Statistical Methods II	3
STAT 546	Linear Models	3
STAT 591	Topics in Statistics ¹	3

1

Special topics and independent study courses require prior approval from the department chair or the student's adviser.

2

Students may choose only one of STAT 305, STAT 314 or STAT 441.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry I	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for diversities in the human experience)		3
Term Hours:		14
Spring semester		
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course (select AOI for global perspectives)		3
Term Hours:		14
Sophomore year		
Fall semester		
MATH 300	Introduction to Mathematical Reasoning	3
OPER 327	Mathematical Modeling	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Computing sequence:		
CMSC 245	Introduction to Programming Using C++	3-4
or	or Introduction to Programming	
CMSC 255	or Engineering Programming	
or	EGRE 245	
Foreign language 101		3
Term Hours:		15-16
Spring semester		
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
Computing sequence: Select appropriate matching course from previous semester.		
CMSC 246	Advanced Programming Using C++	3
or	or Data Structures and Object Oriented Programming	
CMSC 256	Programming	
or	or Advanced Engineering Programming	
EGRE 246		
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Term Hours:		16
Junior year		
Fall semester		
STAT 309	Introduction to Probability Theory	3
Concentration elective		3-4
Experiential fine arts		1-3
General education course (select BOK to complete breadth of knowledge requirement)		3
Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		4-5
BIOL 151	Introduction to Biological Sciences I	-
& BIOZ 151	and Introduction to Biological Science Laboratory I	-
CHEM 101	General Chemistry I	-
& CHEZ 101	and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
Term Hours:		14-18
Spring semester		

STAT 403	Introduction to Stochastic Processes	3
Concentration elective		3-4
Natural sciences elective ¹		3-5
Natural sciences sequence (Select one of the following with appropriate matching course from previous semester.)		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
Open elective		3
Term Hours:		16-20
Senior year		
Fall semester		
MATH 401	Introduction to Abstract Algebra	3
OPER 427	Deterministic Operations Research	3
OPER 428	Stochastic Operations Research	3
SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
Open elective		3
Term Hours:		15
Spring semester		
SSOR 495	Expositions in Statistical Sciences and Operations Research	1
Concentration elective		3-4
Open electives		12
Term Hours:		16-17
Total Hours:		120-130

1

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Mathematical Sciences with concentration in operations research in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate a comprehensive understanding of the theory and application of mathematical programming and of stochastic models. They will know how to obtain, analyze and interpret data, and learn how to use software common in the industry, allowing them to model operations research problems. Students will know how to clearly and concisely present technical information in writing and through oral presentations. The program will also provide students with opportunities to participate in research

projects, internships and other training programs where they develop the skills to evaluate, refine and apply what they learn in the classroom.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including MATH 200, MATH 201 and MATH 307 (calculus sequence), STAT 212, STAT 309, OPER 327 and STAT 403; an overall minimum GPA of 3.0; and a minimum GPA of 3.3 in mathematics, operations research and statistics course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.S. program admission deadline. Three reference letters (at least one from a department faculty member) must accompany the application. The adviser of graduate studies for the mathematical sciences master's program with a concentration in operations research will provide guidance of students in this program. Students who are interested in the accelerated program should consult with the faculty adviser to the operations research concentration of the M.S. program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate mathematical sciences adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Mathematical Sciences degree with concentration in operations research will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. Nine of these credits are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate operations research and statistics courses that may be taken as an undergraduate, once a student is admitted to the program, are in the table below.

Course	Title	Hours
OPER 527	Optimization I	3
OPER 528	Stochastic Simulation	3

Approved 500-level OPER or STAT course, or approved 600-level OPER or STAT with OPER 527 or OPER 528 as prerequisites	3
Approved 500-level or 600-level OPER or STAT course	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
STAT 309	Introduction to Probability Theory	3
Experiential fine arts		1-3
General education course		3-4
Natural science sequence		4-5
Operations research concentration elective		3-4
Term Hours:		14-19
Spring semester		
STAT 403	Introduction to Stochastic Processes	3
General education course		3-4
Natural sciences elective (not from general education science and technology list and different science than chosen for sequence)		3-5
Natural science sequence		4-5
Operations research concentration elective		3-4
Term Hours:		16-20
Senior year		
Fall semester		
OPER 528	Stochastic Simulation	3
SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
Advanced mathematical science elective		3
Open electives		15
Term Hours:		15
Spring semester		
OPER 527	Optimization I	3
SSOR 495	Expositions in Statistical Sciences and Operations Research	1
Open electives		6-8
Operations research concentration elective		3-4
Term Hours:		13-16
Fifth year		
Fall semester		
OPER 639	Practical Optimization	3
SSOR 690	Research and Communications Seminar	3
Graduate operations research electives		6
Term Hours:		12
Spring semester		
OPER 643	Decision and Risk Analysis	3
STAT 613	Stochastic Processes	3

Graduate operations research elective	3
Term Hours:	9

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Statistical Sciences and Operations Research, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of statistics, which teaches students how mathematical models used in the investigation of uncertain phenomena are developed and applied to experimental and nonexperimental data.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Understand basic statistical concepts and terms
- Perform data collection
- Analyze data
- Use statistical software packages
- Understand probability and inference
- Understand calculus and linear algebra
- Communicate results in writings and orally
- Use general linear model

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To

initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MATH 201	Calculus with Analytic Geometry II ¹	4
MATH 307	Multivariate Calculus ¹	4
MATH 310	Linear Algebra ¹	3
• Additional major requirements		
MATH 211 or MATH 300	Mathematical Structures ¹ Introduction to Mathematical Reasoning	3
SSOR 490	Developing Professional Skills in Operations Research and Statistics ¹	3
SSOR 495	Expositions in Statistical Sciences and Operations Research ¹	1
STAT 309	Introduction to Probability Theory ¹	3
• Concentration requirements		
STAT 305	Intermediate Statistics ¹	3
STAT 310	Introduction to Statistical Inference ¹	3
STAT 321	Introduction to Statistical Computing ¹	3
Concentration electives		
Select from concentration electives below. ¹		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I ¹	4
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Natural science sequence: Select one sequence from list below (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		8-10
Natural science elective (different from chosen science sequence)		3-5
Open electives		
Select any course.		16-28
Total Hours		120

¹

These courses/credits require a minimum grade of C.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science sequence

Course	Title	Hours
Select one of the following sequences:		
Sequence 1		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
Sequence 2		
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
Sequence 3		
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PHYS 202	General Physics II	4
Sequence 4		
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
PHYS 208	University Physics II	5
Electives		
For the statistics concentration, six electives (18 credits) must be chosen from the following list. A minimum grade of C is required in these courses.		
Course	Title	Hours
SSOR 493	Internship	3
STAT 403	Introduction to Stochastic Processes	3
STAT 415	Statistical Consulting	3
STAT 421	Applied Statistical Computing Using R	3
STAT 423	Nonparametric Statistics	3
STAT 425	Multivariate Statistics	3
STAT 435	Industrial Statistics	3
STAT 443	Regression	3
STAT 475	Time Series	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry I	4
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Term Hours:		14

Spring semester		Hours
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry II	4
MATH 211	Mathematical Structures	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for diversities in the human experience)		3
Term Hours:		14

Sophomore year		Hours
Fall semester		
MATH 307	Multivariate Calculus	4
STAT 305	Intermediate Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
General education course (select AOI for global perspectives)		3
Term Hours:		16

Spring semester		Hours
MATH 310	Linear Algebra	3
STAT 321	Introduction to Statistical Computing	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Term Hours:		15

Junior year		Hours
Fall semester		
STAT 309	Introduction to Probability Theory	3
Concentration elective		3
Experiential fine arts		1-3

Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	-
PHYS 201	General Physics I	-
PHYS 207	University Physics I	-
Open elective		3

Term Hours: 14-17

Spring semester		Hours
STAT 310	Introduction to Statistical Inference	3
Concentration electives		6
Natural sciences sequence (Select one of the following with appropriate matching course from previous semester.)		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
Open elective		3

Term Hours: 16-17

Senior year		Hours
Fall semester		
SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
Concentration electives		6
Natural sciences elective ¹		3-5
Open elective		3
Term Hours:		15-17

Spring semester		Hours
SSOR 495	Expositions in Statistical Sciences and Operations Research	1
Concentration elective		3
Open electives		12
Term Hours:		16

Total Hours: 120-126

¹

Different science than chosen for sequence.

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Mathematical Sciences with a concentration in statistics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to nine hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned

with a minimum of 141 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will demonstrate a comprehensive understanding of basic statistical concepts, probability and inference, general linear modeling, calculus, and linear algebra. They will know how to select appropriate samples and conduct appropriate experimental data collection methods. Additionally, students will be able to use statistical software packages to perform appropriate analysis of data, including knowledge of the assumptions associated with the procedures and how to determine the appropriate procedure to use. Students will know how to clearly and concisely present technical information in writing and through oral presentations. The program will also provide students with opportunities to participate in research projects, internships and other training programs where they develop the skills to evaluate, refine and apply what they learn in the classroom.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including STAT 212, STAT 305, STAT 321, STAT 309 and STAT 310; an overall minimum GPA of 3.0; and a minimum GPA of 3.3 in mathematics and statistics course work. Successful applicants would enter the program in the fall semester of their senior year. (Optional: Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.)

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Candidates should submit applications for admission immediately following the spring of their junior year, but no later than the M.S. program admission deadline. Three reference letters (at least one from a statistics faculty member) must accompany the application. The adviser of graduate studies for the mathematical sciences master's program with a concentration in statistics will provide guidance of students in this program. Students who are interested in the accelerated program should consult with the faculty adviser to the statistics concentration of the M.S. program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "**Satisfactory academic progress**" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate mathematical sciences adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Mathematical Sciences degree with concentration in statistics will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may be used to satisfy

required major electives or open elective credits for the undergraduate degree. Nine of these credits are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate statistics courses that may be taken as an undergraduate, once a student is admitted to the program, are in the table below.

Course	Title	Hours
STAT 513	Mathematical Statistics I	3
STAT 514	Mathematical Statistics II	3
STAT 546	Linear Models	3
600-level STAT course, approved by the graduate adviser		3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
STAT 309	Introduction to Probability Theory	3
Experiential fine arts		1-3
General education course		3-4
Natural science sequence		4-5
Statistics concentration elective		3
Term Hours:		14-18
Spring semester		
STAT 310	Introduction to Statistical Inference	3
Natural science sequence		4-5
Open elective		3
Statistics concentration electives		6
Term Hours:		16-17
Senior year		
Fall semester		
SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
STAT 513	Mathematical Statistics I	3
Natural sciences elective (not from general education science and technology list and different science than chosen for sequence)		3-5
Statistics concentration electives		6
Term Hours:		15-17
Spring semester		
SSOR 495	Expositions in Statistical Sciences and Operations Research	1
STAT 514	Mathematical Statistics II	3
STAT 546	Linear Models	3
Open elective		3
Statistics concentration elective		3
Term Hours:		13
Fifth year		
Fall semester		

SSOR 690	Research and Communications Seminar	3
STAT 643	Applied Linear Regression	3
Graduate statistics electives		6
Term Hours:		12
Spring semester		
STAT 642	Design and Analysis of Experiments I	3
Graduate statistics electives		3
Term Hours:		9

Statistics, Certificate in (Post-baccalaureate undergraduate certificate)

The Certificate in Statistics is open to students who have received bachelor's degrees in other areas. The primary goal of the program is to allow students with undergraduate majors in science, engineering and the social sciences an opportunity to acquire the formal training in statistics that is currently in demand in industry and government. Some students also may find the program a useful way to prepare for graduate study in statistics.

To be admitted to the program, a student must complete a baccalaureate degree. Application materials and further information may be obtained by calling (804) 828-0001 or TDD (804) 828-0100, or by writing to the following address: Virginia Commonwealth University, Department of Statistical Sciences and Operations Research, Post-baccalaureate Certificate in Statistics, P.O. Box 843083, Richmond, VA 23284-3083.

The certificate program in statistics requires completion of the mathematics and statistics courses listed below. A maximum of 15 credits toward certification may be transferred from course work completed before or after receiving a bachelor's degree. At least 18 approved credits must be from STAT courses at the 300 level or higher and must be taken at VCU. No more than six of these 18 credits can be from courses taken before admission to the certificate program. The student must achieve a minimum GPA (on courses taken at VCU) of 2.5 with no grade below C. All requirements for the certificate must be completed within five years of admission to the program.

The following courses are required (right column contains credit hours for VCU courses):

Course	Title	Hours
Required courses		
MATH 200	Calculus with Analytic Geometry I	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 307	Multivariate Calculus	4
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3
STAT 305 or STAT 314	Intermediate Statistics Applications of Statistics	3-4
STAT 309	Introduction to Probability Theory	3
STAT 310	Introduction to Statistical Inference	3
STAT 321	Introduction to Statistical Computing	3
Electives		
Choose two from the following:		6
STAT 403	Introduction to Stochastic Processes	
STAT 415	Statistical Consulting	

STAT 421	Applied Statistical Computing Using R	
STAT 423	Nonparametric Statistics	
STAT 425	Multivariate Statistics	
STAT 435	Industrial Statistics	
STAT 443	Regression	
STAT 475	Time Series	
Total Hours		33-34

The minimum total of credit hours required for this certificate is 33.

Students accepted to the program will have access to the program coordinator and undergraduate advisers to best determine a plan of study. Statistics courses taught in other units of the university (for example, SCMA 301 and SCMA 302) may be credited toward the certificate with the permission of the program coordinator.

Statistics, minor in

A minor in statistics consists of a minimum of 18 credits and is administered by the Department of Statistical Sciences and Operations Research. These credits include:

Course	Title	Hours
Calculus (three credits minimum)		3
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3
Upper-level statistics courses		12
Total Hours		18

A minimum GPA of 2.0 must be achieved in the minor. Mathematical sciences majors cannot minor in statistics.

Bachelor of Interdisciplinary Studies Program

The Bachelor of Interdisciplinary Studies provides opportunities for students to combine disciplines in unique ways. Students can apply for a nontraditional, individualized and interdisciplinary course of study by designing their own curriculum. (For a detailed description of the individualized interdisciplinary studies program (p. 601) offered through the University College, see the program page in this bulletin.) There are currently no active interdisciplinary studies programs open for entry in the College of Humanities and Sciences.

Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major [College of Humanities and Sciences]

Note: Admission to this program is permanently suspended prior to closure.

Economics Program

- Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences] (p. 308)
- Economics, minor in (p. 311)

Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences]

Undergraduate work in economics is excellent preparation for careers in business, government and teaching, as well as for graduate work in economics and professional schools such as law, public administration and medicine. Specialization in economics prepares students for careers that emphasize analytical thinking, a broad understanding of the economy and business organizations and the proper choice of policies by governments and business enterprises. Because of their analytical, quantitative and decision-making skills, students who major in economics are sought after for a wide array of management and analyst positions.

Economics majors are strongly encouraged to take additional courses in statistics and mathematics, especially if they intend to pursue either careers as practicing economists or graduate study in economics or business. Recommended mathematics courses include one or more of the following courses:

Course	Title	Hours
ECON 403	Introduction to Mathematical Economics	3
MATH 201	Calculus with Analytic Geometry II	4

Recommended statistics courses include one or more of the following courses:

Course	Title	Hours
ECON 501	Introduction to Econometrics	3
SCMA 302	Business Statistics II	3
STAT 314	Applications of Statistics	4

Students should consult with their advisers to determine which of these courses fit their particular interests and backgrounds.

Mission

The mission of the B.S. in Economics is to provide undergraduate students with economic knowledge and skills which will enable them to compete successfully in changing regional, national and global economic environments.

Learning goals

The goal of the economics curriculum is to impart critical-thinking skills, communication skills and quantitative proficiency to its students.

Student learning outcomes

- Students will solve key microeconomic problems.
- Students will solve key macroeconomic problems.
- Students will be able to interpret and analyze data and express economic relationships using graphs, equations and words.
- Students will demonstrate strong oral and written communication skills.
- Students will be able to employ economic models and data to analyze questions of economic significance.

Declaration of major and transfer policies

Admission to the B.S. in Economics program requires a minimum GPA of 2.5. Transfer students who have not yet earned VCU credit must have earned a minimum overall GPA of 2.5 at their previous institution.

Continuing students must have a minimum VCU GPA of 2.5 to enroll in the economics program. To be admitted to the program a student must have earned a minimum grade of C in ECON 210 and ECON 211 or their equivalents.

In addition to meeting the general requirements of the university and the College of Humanities and Sciences, transfer students who plan to enroll in the economics major must comply with the following requirements:

1. Incoming transfer students must have a minimum cumulative GPA of 2.5 from all accredited institutions.
2. Only courses completed at an accredited four-year university will be considered for acceptance to fulfill major requirements at the 300-level or above. Courses completed at an accredited two-year institution will be considered for acceptance to fulfill major requirements at the 200-level.
3. Transfer credits may be applied to no more than 12 hours in the major requirements at the 300-level or above.

Special requirements

The curriculum requires 33 credits of ECON courses. Students also must take MATH 200 or BUSN 212, as well as STAT 210 as collateral requirements as outlined in the degree requirements below. Students may need to take additional mathematics courses to satisfy the prerequisites for MATH 200 or BUSN 212.

Degree requirements for Economics, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
• Additional major requirements		
ECON 211	Principles of Macroeconomics	3
ECON 431	Labor Economics	3
or ECON 441	Experimental Economics	
or ECON 442	Economic Growth	
or ECON 461	Monetary Policy Seminar	
or ECON 489	Senior Seminar in Economics	
• Major electives		
Select ECON (300- or 400-level or 501)		15
Ancillary requirements		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1

MATH 200	Calculus with Analytic Geometry I (either satisfies general education quantitative foundations)	3-4
or BUSN 212	Differential Calculus and Optimization for Business	
STAT 210	Basic Practice of Statistics	3
or SCMA 301	Business Statistics I	
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		46-54
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 151	Precalculus Mathematics (or a higher or MATH course; any of these satisfies general education quantitative foundations)	3-4
or MATH 200		
or BUSN 212	or Calculus with Analytic Geometry I or Differential Calculus and Optimization for Business	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Term Hours:		14-17

Spring semester

ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for diversities in the human experience)		3

Open elective		3
Term Hours:		16

Sophomore year

Fall semester		
ECON 211	Principles of Macroeconomics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Term Hours:		15

Spring semester

ECON 300	Contemporary Economic Issues	3
Foreign language 102		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective or MATH 200 or BUSN 212		3-4
Open elective		3
Term Hours:		15-16

Junior year

Fall semester		
ECON 301	Microeconomic Theory	3
Major elective		3
Open electives		9
Term Hours:		15

Spring semester

ECON 302	Macroeconomic Theory	3
Major elective		3
Open electives		9
Term Hours:		15

Senior year

Fall semester		
ECON 431	Labor Economics	3
or ECON 441	or Experimental Economics or Economic Growth	
or ECON 442	or Monetary Policy Seminar or Senior Seminar in Economics	
or ECON 461		
or ECON 489		
Major elective		3
Open electives		9
Term Hours:		15

Spring semester

Major electives		6
Open electives		9
Term Hours:		15
Total Hours:		120-124

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.A.

The accelerated B.S. and M.A. program allows qualified students to earn both the B.S. and M.A. in economics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of 600-level graduate courses toward both the B.S. and M.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will be more competitive when seeking positions requiring the acquisition, manipulation and analysis of data. While undergraduates are required to obtain some data skills, the M.A. program is far more focused in this area with a course in mathematical economics and three econometrics classes. Furthermore, two of these econometrics classes require students to gather data, perform analysis and report on that analysis. Such practical skills are highly valued in the labor market.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including ECON 300, ECON 301 and ECON 302; an overall GPA of 3.25; and a GPA of 3.25 in economics and quantitative course work. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration. Successful applicants would enter the accelerated program in the summer following their junior year and start the M.A. program in the term after which they receive their bachelor's degree.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program immediately following completion of their junior year, but no later than May 15 of that year. Three reference letters (at least one from an economics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the economics M.A. program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate economics adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Economics degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate

Bulletin. A maximum of 12 graduate credits at the 600 level may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Students in the accelerated program are also required to take ECON 501 as an undergraduate major elective or open elective.

The graduate economics courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
ECON 604	Advanced Microeconomic Theory	3
ECON 612	Econometrics	3
ECON 614	Mathematical Economics	3
Elective ¹		3
Total Hours		12

¹

Students will choose an elective in consultation with the faculty adviser to the M.A. program to serve as an elective for both programs.

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
	Experiential fine arts	1-3
	Open electives	9
	Term Hours:	16-18
Spring semester		
ECON 302	Macroeconomic Theory	3
	Open electives	12
	Term Hours:	15
Summer semester		
ECON 614	Mathematical Economics	3
	Term Hours:	3
Senior year		
Fall semester		
ECON 431	Labor Economics	3
	or ECON 441	Experimental Economics
	or ECON 461	Monetary Policy Seminar
	or ECON 489	Senior Seminar in Economics
ECON 501	Introduction to Econometrics	3
	Open electives	7-10
	Term Hours:	13-16
Spring semester		
ECON 604	Advanced Microeconomic Theory	3
ECON 612	Econometrics	3

M.A. elective	3
Open electives	6
Term Hours:	15

Fifth year

Fall semester		
ECON 607	Advanced Macroeconomic Theory	3
ECON 642	Panel and Nonlinear Methods in Econometrics	3

M.A. elective	3
Term Hours:	9

Spring semester		
ECON 641	Econometric Time-series Analysis	3

M.A. electives	6
Term Hours:	9

Economics, minor in

This minor, offered through the College of Humanities and Sciences, requires a minimum of 18 credits in economics, including:

Course	Title	Hours
ECON 203	Introduction to Economics ¹	3
or ECON 205	The Economics of Product Development and Markets	
or ECON 210	Principles of Microeconomics	
ECON 211	Principles of Macroeconomics	3
Select the remaining courses from upper-level (300-400) economics courses		12
Total Hours		18

1

If selected, a minimum grade of B is required for ECON 203 or ECON 205.

Interdisciplinary Degree Program in Science

Charlene D. Crawley, Ph.D.
Coordinator

[has.vcu.edu/science](http://www.has.vcu.edu/science/) (<http://www.has.vcu.edu/science/>)

The interdisciplinary program in science provides students with a broad, yet fundamental, grounding in the sciences. In addition to the spectrum of required mathematics and science courses, students select a concentration from biology, chemistry, physics or professional science.

Students completing this curriculum earn a Bachelor of Science in Science.

For information concerning the program and advising, students should contact the program coordinator or their academic adviser.

- Science, Bachelor of Science (B.S.) with a concentration in:
 - Biology (p. 311)
 - Chemistry (p. 315)
 - Physics (p. 318)
 - Professional science (p. 320)

Science, Bachelor of Science (B.S.) with a concentration in biology

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 28 to 33 credits in foundation science and mathematics courses and 36 to 38 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

Science majors declaring the biology concentration may not simultaneously declare a major or minor in biology.

Grade requirements

A minimum grade of C is required in each prerequisite course:

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in biology

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INSC 490	Capstone Research Experience in Interdisciplinary Science	3
• Additional major requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
ENVS 301	Introduction to Meteorology (or upper-level natural or health science elective from list below)	3
ENVS 310	Introduction to Oceanography (or upper-level natural or health science elective from list below)	2-3
PHYS 202 or PHYS 208	General Physics II University Physics II	4-5
Select one of the following:		4
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory	
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	
Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below		
• Concentration requirements		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOZ 310	Laboratory in Genetics (or other upper-level biology laboratory)	1-2
BIOL 317	Ecology	3
• Major electives		
Select one upper-level animal or one upper-level plant course, with laboratory, from list below		4
Select two upper-level biology electives		6
Ancillary requirements		
BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics (or placement; satisfies general education quantitative foundations)	4

MATH 200 or SCMA 212 or STAT 314	Calculus with Analytic Geometry I Differential Calculus and Optimization for Business Applications of Statistics	3-4
PHYS 201 or PHYS 207	General Physics I (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) University Physics I	4-5
STAT 208 or STAT 210	Statistical Thinking Basic Practice of Statistics	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		21-34
Total Hours		120

¹

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Animal and plant courses

Course	Title	Hours
Animal group		
BIOL 309	Entomology ¹	4
BIOL 312	Invertebrate Zoology	3
BIOZ 312	Invertebrate Zoology Laboratory	1
BIOL 313	Vertebrate Natural History	3
BIOZ 313	Vertebrate Natural History Laboratory	1
BIOL 391	Topics in Biology (as approved)	1-4
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL 416	Ornithology	3
BIOZ 416	Ornithology Laboratory	2
BIOL 417	Mammalogy ¹	4
BIOL 435	Herpetology ¹	3
BIOL 445	Neurobiology and Behavior ¹	4
BIOL 503	Fish Biology ¹	4
Plant group		
BIOL 320	Biology of the Seed Plant ¹	4
BIOL 321	Plant Development	3
BIOZ 321	Plant Development Laboratory	2
BIOL 322	Economic Botany	3
BIOL 391	Topics in Biology (as approved)	1-4
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4

¹

These courses include laboratory hours and may be used to satisfy laboratory requirements.

Natural science electives

Course	Title	Hours
LFSC 301	Integrative Life Sciences Research	3
LFSC 401	Faith and Life Sciences	3
PHTX 400	Drugs and Their Actions	3
Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:		
BIOL 392	Introduction to Research	
BIOL 475	Biology Capstone Seminar: ____	
BIOL 477	Biology Capstone Experience	
BIOL 489	Communicating Research	
BIOL 490	Presenting Research	
BIOL 492	Independent Study	
BIOL 493	Biology Internship	
BIOL 495	Research and Thesis	
BIOL 496	Biology Preceptorship: ____	
BNFO 292	Independent Study	
BNFO 492	Independent Study	
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	
CHEM 392	Directed Study	
CHEM 492	Independent Study	
CHEM 493	Chemistry Internship	
ENGR 490	Engineering Seminar	
ENGR 492	Independent Study in Engineering	
ENVS 490	Research Seminar in Environmental Studies	
ENVS 492	Independent Study	
ENVS 493	Environmental Studies Internship	
FRSC 490	Professional Practices in Forensic Science	
FRSC 492	Forensic Science Independent Study	
FRSC 493	Forensic Science Internship	
INSC 490	Capstone Research Experience in Interdisciplinary Science	
PHYS 490	Seminar in Conceptual Physics	
PHYS 492	Independent Study	

Natural science laboratory electives

Course	Title	Hours
BIOL 205	Basic Human Anatomy ¹	4
BIOL 309	Entomology ¹	4
BIOL 320	Biology of the Seed Plant ¹	4
BIOL 402	Comparative Vertebrate Anatomy ¹	5
BIOL 417	Mammalogy ¹	4
BIOL 435	Herpetology ¹	3
BIOL 445	Neurobiology and Behavior ¹	4
BIOL 503	Fish Biology ¹	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology ¹	4
BNFO 420	Applications in Bioinformatics ¹	3
BNFO 440	Computational Methods in Bioinformatics ¹	3

CHEZ: any 200-level or higher course

EGRB 307	Biomedical Instrumentation ¹	4
EGRB 308	Biomedical Signal Processing ¹	4
EGRB 310	Biomechanics ¹	4
ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics II ¹	4
PHYS 208	University Physics II ¹	5
PHYZ 320	Modern Physics Laboratory	1

1

Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

Health science electives

Course	Title	Hours
AFAM/ANTH/INTL/ GSWS 309	Gender and Global Health	3
AFAM 310	Black Health Matters: Social Determinants of Health in the African American Community	3
GSWS 392	Gender and Health Across the Life Span	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3
PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3
SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: ____	3
SOCY 344	Medical Sociology	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

		Hours
MATH 151	Precalculus Mathematics (or placement) (satisfies general education quantitative foundations)	4
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
UNIV 101	Introduction to the University	1
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
	General education course (select AOI for global perspectives)	3

Term Hours: 14

Spring semester

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 200 or SCMA 212 or STAT 314	Calculus with Analytic Geometry I or Differential Calculus and Optimization for Business or Applications of Statistics	3-4
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	General education course (select BOK to satisfy breadth of knowledge requirement and AOI for diversities in the human experience)	3

Term Hours: 14-15

Sophomore year**Fall semester**

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
PHYS 201 or PHYS 207	General Physics I (satisfies general education AOI for scientific and logical reasoning) or University Physics I	4-5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Experiential fine arts (SPCH 321 or other upper-level option recommended)	1-3

Term Hours: 16-19

Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
	General education course (select BOK to satisfy breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)	3
	Open elective	3

Term Hours: 14-15

Junior year**Fall semester**

BIOL 300	Cellular and Molecular Biology	3
BIOL 317	Ecology	3
ENVS 105 or URSP 204	Physical Geology (or 200-level science) or Physical Geography	3
URSZ 204	Physical Geography Laboratory	1
	Foreign language 101 or upper-level minor elective	3
	Open elective or upper-level minor elective	2-3

Term Hours: 15-16

Spring semester

BIOL 310	Genetics	3
ENVS 301	Introduction to Meteorology (or upper-level science elective)	3
BIOZ 310	Laboratory in Genetics (or other upper-level biology laboratory)	1-2
	Foreign language 102 or upper-level minor elective	3
	Open elective or upper-level minor elective	3
	Open elective	3

Term Hours: 16-17

Senior year**Fall semester**

ENVS 310	Introduction to Oceanography (or upper-level science elective)	2-3
	One upper-level animal or upper-level plant course, with laboratory	4
	Open electives or upper-level minor electives	9

Term Hours: 15-16

Spring semester

INSC 490	Capstone Research Experience in Interdisciplinary Science	3
	Open electives or upper-level minor electives, as needed	4-6
	Open elective	3
	Upper-level biology electives	6

Term Hours: 16-18

Total Hours: 120-130

The minimum number of credit hours required for this degree is 120.

Science, Bachelor of Science (B.S.) with a concentration in chemistry

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 29 to 33 credits in foundation science and mathematics courses and 33 to 34 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

Science majors declaring the chemistry concentration may not simultaneously declare a major or minor in chemistry.

Grade requirements

A minimum grade of C is required in each prerequisite course:

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in chemistry

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INSC 490	Capstone Research Experience in Interdisciplinary Science	3
• Additional major requirements		
Select one of the following:		3
BIOL 317	Ecology	
ENVS/PHYS 315	Energy and the Environment	
BIOL 332/ENVS 330	Environmental Pollution	
Or upper-level natural science elective from list below		
ENVS 301	Introduction to Meteorology (or upper-level natural or health science elective from list below)	3
ENVS 310	Introduction to Oceanography (or upper-level natural or health science elective from list below)	2-3
Select one of the following:		4
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory	
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	
Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below		
PHYS 202 or PHYS 208	General Physics II University Physics II	4-5
• Concentration requirements		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
Ancillary requirements		
Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 103	Global Environmental Biology	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Select one of the following:		4

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 201 & BIOZ 201	Human Biology and Human Biology Laboratory	
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics (or placement; satisfies general education quantitative foundations)	4
MATH 200	Calculus with Analytic Geometry I	4
PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4-5
or PHYS 207	University Physics I	
STAT 208 or STAT 210	Statistical Thinking Basic Practice of Statistics	3
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		24-35
Total Hours		120

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Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.**Natural science electives**

Course	Title	Hours
LFSC 301	Integrative Life Sciences Research	3
LFSC 401	Faith and Life Sciences	3
PHTX 400	Drugs and Their Actions	3
Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:		
BIOL 392	Introduction to Research	
BIOL 475	Biology Capstone Seminar. ____	
BIOL 477	Biology Capstone Experience	
BIOL 489	Communicating Research	
BIOL 490	Presenting Research	
BIOL 492	Independent Study	
BIOL 493	Biology Internship	
BIOL 495	Research and Thesis	
BIOL 496	Biology Preceptorship: ____	
BNFO 292	Independent Study	
BNFO 492	Independent Study	
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	
CHEM 392	Directed Study	

CHEM 492	Independent Study
CHEM 493	Chemistry Internship
ENGR 490	Engineering Seminar
ENGR 492	Independent Study in Engineering
ENVS 490	Research Seminar in Environmental Studies
ENVS 492	Independent Study
ENVS 493	Environmental Studies Internship
FRSC 490	Professional Practices in Forensic Science
FRSC 492	Forensic Science Independent Study
FRSC 493	Forensic Science Internship
INSC 490	Capstone Research Experience in Interdisciplinary Science
PHYS 490	Seminar in Conceptual Physics
PHYS 492	Independent Study

Natural science laboratory electives

Course	Title	Hours
BIOL 205	Basic Human Anatomy ¹	4
BIOL 309	Entomology ¹	4
BIOL 320	Biology of the Seed Plant ¹	4
BIOL 402	Comparative Vertebrate Anatomy ¹	5
BIOL 417	Mammalogy ¹	4
BIOL 435	Herpetology ¹	3
BIOL 445	Neurobiology and Behavior ¹	4
BIOL 503	Fish Biology ¹	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology ¹	4
BNFO 420	Applications in Bioinformatics ¹	3
BNFO 440	Computational Methods in Bioinformatics ¹	3
CHEZ: any 200-level or higher course		
EGRB 307	Biomedical Instrumentation ¹	4
EGRB 308	Biomedical Signal Processing ¹	4
EGRB 310	Biomechanics ¹	4
ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics II ¹	4
PHYS 208	University Physics II ¹	5
PHYZ 320	Modern Physics Laboratory	1

1

Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

Health science electives

Course	Title	Hours
AFAM/ANTH/INTL/ GSWS 309	Gender and Global Health	3
AFAM 310	Black Health Matters: Social Determinants of Health in the African American Community	3

GSWS 392	Gender and Health Across the Life Span	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3
PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3
SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: _____	3
SOCY 344	Medical Sociology	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MATH 151	Precalculus Mathematics (or placement) (satisfies general education quantitative foundations)	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course (select AOI for global perspectives)	3
Term Hours:		15
Spring semester		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I	4

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course (select BOK to satisfy breadth of knowledge requirement and AOI for diversities in the human experience)	3
Term Hours:		15

Sophomore year

Fall semester

Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103	Global Environmental Biology	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	Experiential fine arts	1-3
Term Hours:		13-15

Spring semester

Select one of the following:		4
BIOL 201 & BIOZ 201	Human Biology and Human Biology Laboratory	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
STAT 208	Statistical Thinking	3
	or or Basic Practice of Statistics	
	STAT 210	
	General education course (select BOK to satisfy breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)	3
Term Hours:		15

Junior year

Fall semester

CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
PHYS 201	General Physics I (either satisfies general education BOK for natural sciences and	4-5
	or AOI for scientific and logical reasoning)	
	PHYS 207 or University Physics I	
	Foreign language 101, upper-level open elective or minor elective	3
	Open elective	3
Term Hours:		15-16
Spring semester		
ENVS 301	Introduction to Meteorology (or upper-level science elective)	3

PHYS 202 or PHYS 208	General Physics II or University Physics II	4-5
Foreign language 102, upper-level open elective or minor elective		3
Open elective		3
Upper-level open elective or minor elective		3
Term Hours:		16-17
Senior year		
Fall semester		
BIOL 317 or ENVS 315 or PHYS 315 or BIOL 332 or ENVS 330	Ecology or Energy and the Environment or Energy and the Environment or Environmental Pollution or Environmental Pollution	3
ENVS 105 or URSP 204	Physical Geology or Physical Geography	3
URSZ 204	Physical Geography Laboratory	1
Open elective		3
Upper-level open elective or minor electives		6
Term Hours:		16
Spring semester		
ENVS 310	Introduction to Oceanography (or upper-level science elective)	3
INSC 490	Capstone Research Experience in Interdisciplinary Science	3
Upper-level open electives or minor electives		9
Term Hours:		15
Total Hours:		120-124

The minimum number of credit hours required for this degree is 120.

Science, Bachelor of Science (B.S.) with a concentration in physics

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 27 credits in foundation science and mathematics courses and 34 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum

Grade requirements

A minimum grade of C is required in each prerequisite course:

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in physics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INSC 490	Capstone Research Experience in Interdisciplinary Science	3
• Additional major requirements		
ENVS 301	Introduction to Meteorology (or upper-level science elective)	3
ENVS 310	Introduction to Oceanography (or upper-level science elective)	3
MATH 201	Calculus with Analytic Geometry II	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
• Concentration requirements		
PHYS 208	University Physics II	5

PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
PHYS 450	Senior Physics Laboratory	3
• Major electives		
Select an additional eight to nine credits from the following:		8-9
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
OPER 327	Mathematical Modeling	
PHYS 103 & PHYZ 103	Elementary Astronomy and Elementary Astronomy Laboratory	
PHYS/MHIS 307	The Physics of Sound and Music	
Or any course allowable for the B.S. in Physics, or a science elective approved by adviser		
Ancillary requirements		
Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 103	Global Environmental Biology	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
HUMS 202	Choices in a Consumer Society	1
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 151	Precalculus Mathematics (or placement; satisfies general education quantitative foundations)	4
MATH 200	Calculus with Analytic Geometry I	4
PHYS 207	University Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	5
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		27-36
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
UNIV 101	Introduction to the University	1
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
General education course (select AOI for global perspectives)		3
Term Hours:		15
Spring semester		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry I	4
PHYS 207	University Physics I (satisfies general education AOI for scientific and logical reasoning)	5
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
Term Hours:		17
Sophomore year		
Fall semester		
Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103	Global Environmental Biology	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
MATH 201	Calculus with Analytic Geometry II	4
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		16
Spring semester		
MATH 301	Differential Equations	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
General education course (select BOK to satisfy breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)		3

General education course (select BOK to satisfy breadth of knowledge requirement and AOI for diversities in the human experience) 3-4

Term Hours: 13-14

Junior year

Fall semester

PHYS 103 Elementary Astronomy 3
or
OPER 327 or Mathematical Modeling

PHYS 301 Classical Mechanics I 3

PHYS 307 The Physics of Sound and Music (fulfills experiential fine arts gen ed requirement) 3

Foreign language 101, upper-level open elective or minor elective 3

Open elective 3

Term Hours: 15

Spring semester

ENVS 301 Introduction to Meteorology (or upper-level science elective) 3

ENVS 310 Introduction to Oceanography (or upper-level science elective) 3

PHYS 450 Senior Physics Laboratory 3

Foreign language 102, upper-level open elective or minor elective 3

Upper-level open elective or minor elective 3

Term Hours: 15

Senior year

Fall semester

BIOL 317 Ecology 3
or
ENVS 315 or Energy and the Environment
or
PHYS 315 or Environmental Pollution
or
BIOL 332
or
ENVS 330

ENVS 105 Physical Geology 3
or
URSP 204 or Physical Geography

URSZ 204 Physical Geography Laboratory 1

Experiential fine arts (if not fulfilled by PHYS/MHIS 307, upper-level recommended) 1-3

Open elective 3

Upper-level open elective or minor elective 3

Term Hours: 14-16

Spring semester

INSC 490 Capstone Research Experience in Interdisciplinary Science 3

Upper-level electives or minor electives 9

Upper-level science elective 3

Term Hours: 15

Total Hours: 120-123

Science, Bachelor of Science (B.S.) with a concentration in professional science

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 29 to 33 credits in foundation science and mathematics courses and 35 to 39 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

Grade requirements

A minimum grade of C is required in each prerequisite course:

Course	Title	Hours
CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

Course	Title	Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

The minimum number of credit hours required for this degree is 120.

Degree requirements for B.S. in Science with a concentration in professional science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INSC 490	Capstone Research Experience in Interdisciplinary Science	3
• Additional major requirements		
BIOL 341/ANTH 301	Human Evolution (or upper-level natural science elective from list below)	4
INSC 300	Experiencing Science (or upper-level natural science elective from list below)	3
or ENVS/ENGL 368	Nature Writing	
BIOL 317	Ecology (or upper-level natural science elective from list below)	3
or BIOL 332/ENVS 330	Environmental Pollution	
or ENVS/PHYS 315	Energy and the Environment	
ENVS 301	Introduction to Meteorology (or upper-level natural science elective from list below)	3
or ENVS 401	Meteorology and Climatology	
ENVS 310	Introduction to Oceanography (or upper-level natural science elective from list below)	3
or ENVS 411	Oceanography	
Select one of the following:		4
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory (PHYS 101 is a gen ed course and cannot be counted toward the major)	
PHYS 107	Wonders of Technology	
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory	
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	
Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below		
• Concentration requirements		
Select an ethics or upper-level health-related science elective from either of the lists below.		3
Select research, internship (see research experience electives list) or upper-level service-learning experience (to equal a minimum of three credits alone or in combination with other upper-level natural or health science electives).		3
Select two additional courses at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval. Choose from the following:		5-6

EDUS 300	School and Society (may be used if student is preparing for teaching)	
EDUS 301	Human Development and Learning (may be used if student is preparing for teaching)	
LFSC/RELS 401	Faith and Life Sciences	
MATH or STAT: 200-level or higher		
Or a 200-level or higher natural or health science elective from list below		
Ancillary requirements		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
or BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
or CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics	4
MATH 200	Calculus with Analytic Geometry I	3-4
or SCMA 212	Differential Calculus and Optimization for Business	
or STAT 314	Applications of Statistics	
PHYS 201	General Physics I	4-5
or PHYS 202	General Physics II	
or PHYS 207	University Physics I	
or PHYS 208	University Physics II	
STAT 208	Statistical Thinking (either satisfies general education quantitative foundations)	3
or STAT 210	Basic Practice of Statistics	
Select one of the following:		3-4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 103	Global Environmental Biology	
CHEM 110	Chemistry and Society	
PHYS 103	Elementary Astronomy	
Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below		
Select a second introductory science course (with laboratory) in two of the following three areas: biology, chemistry or physics ¹		8-10
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	
PHYS 201	General Physics I	

PHYS 202	General Physics II	
PHYS 207	University Physics I	
PHYS 208	University Physics II	
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		16-30
Total Hours		120

1

Do not select PHYS 202 or PHYS 208 if the other course was selected above; this will ensure that you have two courses that satisfy the general education BOK for natural sciences and AOI for scientific and logical reasoning.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Natural science electives

Course	Title	Hours
LFSC 301	Integrative Life Sciences Research	3
LFSC 401	Faith and Life Sciences	3
PHTX 400	Drugs and Their Actions	3
Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:		
BIOL 392	Introduction to Research	
BIOL 475	Biology Capstone Seminar: ____	
BIOL 477	Biology Capstone Experience	
BIOL 489	Communicating Research	
BIOL 490	Presenting Research	
BIOL 492	Independent Study	
BIOL 493	Biology Internship	
BIOL 495	Research and Thesis	
BIOL 496	Biology Preceptorship: ____	
BNFO 292	Independent Study	
BNFO 492	Independent Study	
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	
CHEM 392	Directed Study	
CHEM 492	Independent Study	
CHEM 493	Chemistry Internship	
ENGR 490	Engineering Seminar	
ENGR 492	Independent Study in Engineering	
ENVS 490	Research Seminar in Environmental Studies	
ENVS 492	Independent Study	
ENVS 493	Environmental Studies Internship	
FRSC 490	Professional Practices in Forensic Science	
FRSC 492	Forensic Science Independent Study	
FRSC 493	Forensic Science Internship	

INSC 490	Capstone Research Experience in Interdisciplinary Science
PHYS 490	Seminar in Conceptual Physics
PHYS 492	Independent Study

Natural science laboratory electives

Course	Title	Hours
BIOL 205	Basic Human Anatomy ¹	4
BIOL 309	Entomology ¹	4
BIOL 320	Biology of the Seed Plant ¹	4
BIOL 402	Comparative Vertebrate Anatomy ¹	5
BIOL 417	Mammalogy ¹	4
BIOL 435	Herpetology ¹	3
BIOL 445	Neurobiology and Behavior ¹	4
BIOL 503	Fish Biology ¹	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology ¹	4
BNFO 420	Applications in Bioinformatics ¹	3
BNFO 440	Computational Methods in Bioinformatics ¹	3
CHEZ: any 200-level or higher course		
EGRB 307	Biomedical Instrumentation ¹	4
EGRB 308	Biomedical Signal Processing ¹	4
EGRB 310	Biomechanics ¹	4
ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics II ¹	4
PHYS 208	University Physics II ¹	5
PHYZ 320	Modern Physics Laboratory	1

1

Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

Health science electives

Course	Title	Hours
AFAM/ANTH/INTL/ GSWS 309	Gender and Global Health	3
AFAM 310	Black Health Matters: Social Determinants of Health in the African American Community	3
GSWS 392	Gender and Health Across the Life Span	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3

PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3
SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: _____	3
SOCY 344	Medical Sociology	3

Ethics electives

Course	Title	Hours
LFSC/RELS 401	Faith and Life Sciences	3
PHIL 201	Introduction to Ethics	3
PHIL 211	History of Ethics	3
PHIL 212	Ethics and Applications	3
PHIL 213	Ethics and Health Care	3
PHIL 214	Ethics and Business	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3

Research, internship electives

Course	Title	Hours
AFAM 399	Interdisciplinary Research Methods	3
ANTH 303	Archaeological Methods and Research Design	4
BIOL 490	Presenting Research	1
BIOL 492	Independent Study	1-4
BIOL 493	Biology Internship	1-3
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
FRSC 492	Forensic Science Independent Study	1-3
FRSC 493	Forensic Science Internship	3
PHYS 492	Independent Study	1-3
PSYC 317	Experimental Methods	3
SOCY 320	Research Methods in the Social Sciences	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
Select one of the following CHEM sequences (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning):	3-4
CHEM 101 & CHEZ 101	-
General Chemistry I and General Chemistry Laboratory I	
CHEM 110	-
Chemistry and Society	
MATH 151	4
Precalculus Mathematics	

STAT 208	Statistical Thinking (either satisfies general education quantitative foundations)	3
or		
STAT 210	or Basic Practice of Statistics	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		14-15

Spring semester

Select one of the following sequences:	4-5	
BIOL 101 & BIOZ 101	-	
Biological Concepts and Biological Concepts Laboratory		
BIOL 103	-	
Global Environmental Biology		
BIOL 151 & BIOZ 151	-	
Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I		
BIOL 152 & BIOZ 152	-	
Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II		
CHEM 102 & CHEZ 102	-	
General Chemistry II and General Chemistry Laboratory II		
PHYS 101 & PHYZ 101	-	
Foundations of Physics and Foundations of Physics Laboratory		
PHYS 107	-	
Wonders of Technology		
PHYS 201	-	
General Physics I		
PHYS 207	-	
University Physics I		
HUMS 202	1	
Choices in a Consumer Society		
MATH 200	3-4	
Calculus with Analytic Geometry I		
or		
SCMA 212	-	
or Differential Calculus and Optimization for Business		
or		
STAT 314	-	
or Applications of Statistics		
UNIV 112	3	
Focused Inquiry II (satisfies general education UNIV foundations)		
Play course video for Focused Inquiry II		
General education course (select AOI for global perspectives)	3	
Term Hours:		14-16

Sophomore year

Fall semester	Hours
Select one of the following BIOL sequences:	4
BIOL 101 & BIOZ 101	-
Biological Concepts and Biological Concepts Laboratory	
BIOL 103	-
Global Environmental Biology	
BIOL 151 & BIOZ 151	-
Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	-
Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Select one of the following PHYS sequences:	4-5

PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	-
PHYS 107	Wonders of Technology	-
PHYS 202	General Physics II	-
PHYS 208	University Physics II	-
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course (select AOI for diversities in the human experience)	3
	General education course (select select BOK to satisfy breadth of knowledge requirement and AOI for creativity, innovation and aesthetic inquiry)	3

Term Hours: 17-18

Spring semester

	Select one of the following combinations or a 200-level science with laboratory:	4
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory	-
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	-
	Select a second introductory science course (with laboratory) in one of the following three areas: biology, chemistry or physics	4
	Experiential fine arts (SPCH 321, ARTE 301 or other upper-level option recommended)	1-3
	General education course (select BOK to satisfy breadth of knowledge requirement)	3
	Open elective	3

Term Hours: 15-17

Junior year

Fall semester

	Select one of the following or upper-level science:	3
INSC 300	Experiencing Science	-
ENVS 368 or ENGL 368	Nature Writing or Nature Writing	-
PHYS 103	Elementary Astronomy	3
PHYZ 103	Elementary Astronomy Laboratory (or Introduction to Pre-Health topics course, or a 200-level science with laboratory)	1
	Ethics or other health-related science	3
	Foreign language 101, upper-level open elective or minor elective	3
	General education course (if no science selection above satisfies AOI for scientific and logical reasoning) or open elective	3

Term Hours: 16

Spring semester

	Select one of the following:	3
BIOL 317	Ecology	-
BIOL 332 or ENVS 330	Environmental Pollution or Environmental Pollution	-
ENVS 315 or PHYS 315	Energy and the Environment or Energy and the Environment	-

ENVS 310 or ENVS 411	Introduction to Oceanography (or upper-level science) or Oceanography	3
	Additional course at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	3
	Foreign language 102, upper-level open elective or minor elective	3
	Upper-level open elective or minor elective	3

Term Hours: 15

Senior year

Fall semester

BIOL 341/ ANTH 301	Human Evolution (or upper-level science)	4
ENVS 301 or ENVS 401	Introduction to Meteorology or Meteorology and Climatology	3
	Additional course at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	3
	Select a second introductory science course (with laboratory) in a second of the following three areas: biology, chemistry or physics	4
	Upper-level open elective or minor elective	1-2

Term Hours: 15-16

Spring semester

INSC 490	Capstone Research Experience in Interdisciplinary Science	3
	Research, internship or upper-level service-learning experience	3
	Upper-level open electives or minor electives	8-9

Term Hours: 14-15

Total Hours: 120-128

The minimum number of credit hours required for this degree is 120.

Richard T. Robertson School of Media and Culture

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Coordinator of student services

The Robertson School of Media and Culture prepares effective and skilled communicators through quality instruction, advising and student services, based on real-world applications. Through research,

professional service and scholarship in applied communications, the school advances the knowledge and practice of a multidisciplinary and evolving media environment. The school values truth, ethics, creativity, innovation, collaboration, cultural diversity, shared governance and community engagement.

The school offers a Bachelor of Science in Mass Communications with specialization in one of four concentrations: advertising, journalism, media production or public relations. The school also awards the Master of Science in Mass Communications, with concentrations in the areas of integrated communication and multimedia journalism.

Undergraduate information

Admission guidelines and requirements

Incoming students can declare mass communications as their major through the last day of add/drop. VCU students in other programs who wish to declare mass communications as their major must complete MASC 101 with a minimum grade of C and have a minimum cumulative GPA of 2.5. In addition, students planning to major in advertising must complete MASC 201 with a minimum grade of C; and students planning to major in public relations must complete MASC 210 with a minimum grade of C.

Full-time students can spend no more than two academic years in the foundation from the time of enrollment. If they have not advanced to a concentration, then they will be separated from the major.

Admittance to a concentration in the Robertson School of Media and Culture is contingent on meeting the following requirements: an overall minimum GPA of 2.5 in all courses and completion of the required mass communications foundation courses. Transfer students will be evaluated on an individual basis but generally will be required to meet the prerequisites for admission during the second semester they are enrolled at VCU.

Once admitted to a concentration, students must maintain a minimum cumulative and major GPA of 2.5. If a student's GPA falls below 2.5, he or she will have one year to meet the GPA requirement. Students who fail to do so will be separated from the program. This does not preclude the student from completing another major at VCU.

Certification of these requirements must accompany a formal petition for admission to a concentration. Students at this time must select a concentration and, if available, a sub-concentration.

Students who have been separated from the major may appeal to the school's Undergraduate Studies Committee by following the process described on the school's website.

Mass Communications Scholars Program

The Mass Communication Scholars Program demands a rigorous course load and a high GPA. It prepares students for professional positions in the communications fields and for competitive post-graduate programs. The program supports the highest standards of excellence in education and is designed to enhance the education achievement of students through a variety of special opportunities, demands and programs.

The Mass Communication Scholars Program is open to undergraduate mass communications majors who have been accepted into the VCU Honors College.

To graduate as Mass Communications Scholars, students must:

- Maintain an overall 3.5 GPA and a 3.5 GPA in the major.
- Maintain good standing in the VCU Honors College.
- Complete 18 credit hours in honors courses or "variants." At least 15 of these honors credits must be taken in the school. At least three honors credits must be completed each academic year.
- Attend at least four Honors-speakers events or colloquia each academic year for exchange of ideas.
- Complete a capstone, three-credit thesis or project course, MASC 492.
- Complete an approved international component.
- Compile a dossier or portfolio of their work to document their educational career, major, interests and scholarly pursuits. The dossier will include an essay on how the student has become a well-educated individual deserving of Mass Communications Scholars designation.

The Robertson School of Media and Culture will offer at least two honors courses or "variants" per year. Variants are courses in which students may receive honors credit while in non-honors courses by meeting additional requirements such as more advanced readings, greater depth in research or project work or additional assignments as deemed appropriate by the instructor (and approved by the Honors College).

The Mass Communications Scholars Program is a departmental honors program linked to the VCU Honors College. Mass communications students will be able to graduate with mass communications honors and with university honors. Mass Communications Scholars will earn a distinctive designation at their graduation ceremony.

Honors courses and courses designated as variants will be listed in the Schedule of Classes for each semester. Students wishing to enter the Mass Communications Scholars Program should contact the program coordinator.

- Mass Communications, Bachelor of Science (B.S.) with a concentration in:
 - Advertising/creative (p. 325)
 - Advertising/strategic (p. 327)
 - Journalism/broadcast (p. 330)
 - Journalism/digital (p. 332)
 - Media production (p. 334)
 - Public relations (p. 336)
- Media studies, minor in (p. 338)

Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations.

The concentration in advertising prepares students for careers at advertising agencies, marketing departments of corporations or service organizations, and media companies.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have both a minimum cumulative GPA and a minimum major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for advertising students

MASC 101; MASC 201; MASC 204 with a minimum grade of C; and completion of UNIV 111, UNIV 112, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208) and natural sciences and scientific and logical reasoning requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203 or MASC 204, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		

MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3
MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 201	Curiousness	3
MASC 204 or MASC 203	Story Journalism Writing	3
MASC 380	History of Advertising	3
MASC 392	Perspicuousness	3
MASC 394	Imagination	3
MASC 450	Style	3
MASC 451	Invention	3
MASC 481	Completeness	3
• Major electives		
MASC electives		6
Ancillary requirements		
ARTH 104	Survey of Art II (satisfies experiential fine arts requirement)	3
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ¹	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and/or AOI for creativity, innovation and aesthetic inquiry)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MKTG 301	Marketing Principles (ACCT 202, ACCT 203 or ACCT 204 will also satisfy this requirement)	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) Basic Practice of Statistics	3
POLI or URSP course (300 level or higher)		3
Foreign language through the 102 level (by course or placement)		0-6
Literature course (300-level or above) except ENGL/TEDU 386 or TEDU 387		3
Open electives		
Select any course.		20-26
Total Hours		120

1

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester

		Hours
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MATH 131 or MATH 141	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts as open elective) or Algebra with Applications	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select BOK for natural sciences and/or AOI for scientific and logical reasoning)		3-4
Open elective		3
Term Hours:		15-16

Spring semester

ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
MASC 201	Curiousness	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) or Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Open elective		3
Term Hours:		16

Sophomore year

Fall semester

ARTH 104	Survey of Art II (satisfies experiential fine arts requirement)	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and/or AOI for creativity, innovation and aesthetic inquiry)	3
HIST 103	Survey of American History	3
MASC 204	Story	3
Foreign language 101		3
Term Hours:		15

Spring semester

HIST 104	Survey of American History	3
MASC 300	Technical Prowess	3
MASC 380	History of Advertising	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 102		3
Term Hours:		15

Junior year

Fall semester

MASC 274	Diversity in the Media (satisfies general education for AOI diversities in the human experiences)	3
MASC 392	Perspicuousness	3
MASC 394	Imagination	3
General education course		3
Literature course (300-level or above) except ENGL 386/ TEDU 386 or TEDU 387		3
Term Hours:		15

Spring semester

MASC 390	Ethical Problems in Mass Media	3
MASC 450	Style	3
MKTG 301	Marketing Principles (ACCT 202, 203 or 204 will also satisfy this requirement)	3
MASC elective (300-400 level)		3
POLI or URSP course (300-level or higher)		3
Term Hours:		15

Senior year

Fall semester

MASC 408	Communications Law	3
MASC 451	Invention	3
MASC elective (300-400 level)		3
Elective (300-400 level)		3
Open elective		3
Term Hours:		15

Spring semester

MASC 481	Completeness	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
Open electives		5
Term Hours:		14
Total Hours:		120-121

The minimum number of credit hours required for this degree is 120.

Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations. The concentration in advertising prepares students for careers at

advertising agencies, marketing departments of corporations or service organizations, and media companies.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The overview section (p. 324) of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have both a minimum cumulative GPA and a minimum major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for advertising students

MASC 101; MASC 201; MASC 204 with a minimum grade of C; and completion of UNIV 111, UNIV 112, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208); and natural sciences and scientific and logical reasoning requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203 or MASC 204, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3
MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 201	Curiousness	3
MASC 204	Story	3
or MASC 203	Journalism Writing	
MASC 380	History of Advertising	3
MASC 398	Awareness	3
MASC 399	Empathy	3
MASC 459	Judgment	3
MASC 481	Completeness	3
• Major electives		
MASC electives		9
Ancillary requirements		
ARTH 104	Survey of Art II (satisfies experiential fine arts requirement)	3
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ¹	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine arts and/or AOI for creativity, innovation and aesthetic inquiry)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MKTG 301	Marketing Principles (ACCT 202, ACCT 203 or ACCT 204 will also satisfy this requirement)	3
STAT 208	Statistical Thinking (either satisfies general education quantitative foundations)	3
or STAT 210	Basic Practice of Statistics	

POLI or URSP course (300 level or higher)	3
Foreign language through the 102 level (by course or placement)	0-6
Literature course (300-level or above) except ENGL/TEDU 386 or TEDU 387	3
Open electives	
Select any course.	20-26
Total Hours	120

1

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
MASC 101 Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MATH 131 or MATH 141 Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts as open elective) or Algebra with Applications	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations) Play course video for Focused Inquiry I	3
General education course (select BOK for natural sciences and/or AOI for scientific and logical reasoning)	3-4
Open elective	3
Term Hours:	15-16

Spring semester

ECON 203 Introduction to Economics (satisfies general education AOI for global perspectives)	3
HUMS 202 Choices in a Consumer Society	1
MASC 201 Curiousness	3
STAT 208 Statistical Thinking (satisfies general education quantitative foundations)	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) Play course video for Focused Inquiry II	3
Open elective	2-3
Term Hours:	15-16

Sophomore year

Fall semester

ARTH 104 Survey of Art II (satisfies experiential fine arts requirement)	3
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ENGL 215 Reading Literature (satisfies general education BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)	3
HIST 103 Survey of American History	3
MASC 204 Story	3
Foreign language 101	3
Term Hours:	15

Spring semester

HIST 104 Survey of American History	3
MASC 300 Technical Prowess	3
MASC 380 History of Advertising	3
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 102	3
Term Hours:	15

Junior year

Fall semester

MASC 398 Awareness	3
MASC 399 Empathy	3
General education course	3
Literature course (300-level or above) except ENGL 386/ TEDU 386 or TEDU 387	3
Open elective (300-400 level)	3
Term Hours:	15

Spring semester

MASC 274 Diversity in the Media (satisfies general education AOI for diversities in the human experience)	3
MKTG 301 Marketing Principles (ACCT 202, 203 or 204 will also satisfy this requirement)	3
MASC electives (300-400 level)	6
POLI or URSP course (300-level or higher)	3
Term Hours:	15

Senior year

Fall semester

MASC 390 Ethical Problems in Mass Media	3
MASC 408 Communications Law	3
MASC 459 Judgment	3
Electives (300-400 level)	3
Open elective	3
Term Hours:	15

Spring semester

MASC 481 Completeness	3
MASC 493 Fieldwork/Internship	3
MASC 499 Career Minded	3
Elective (300-400 level)	3
Open elective	3
Term Hours:	15

Total Hours: 120-122

The minimum number of credit hours required for this degree is 120.

Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations. The journalism concentration provides students with the skills and practice necessary for careers in the news media.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for journalism students

MASC 101, MASC 203 and MASC 261 with a minimum grade of C; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208), and natural sciences and scientific and logical reasoning requirements. (Completion of both ECON 210 and ECON 211 may substitute for ECON 203.)

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3
MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 203	Journalism Writing	3
MASC 261	History and Development of Journalism	3
MASC 303	Reporting for Print and Web	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Beginning Media Production	3
MASC 396	Mobile and Social Media Journalism	3
MASC 415	Advanced Media Production	3
MASC 460	Advanced Television Newsgathering	3
MASC 461	The Documentary	3
or MASC 465	Newscasting	
• Major electives		
MASC elective		3
Ancillary requirements		
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ¹	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and/or AOI creativity, innovation and aesthetic inquiry)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI 103	U.S. Government (satisfies general education AOI for diversities in the human experience)	3

STAT 208	Statistical Thinking (either satisfies general education quantitative foundations)	3
or STAT 210	Basic Practice of Statistics	
POLI or URSP course (300 level or higher)		3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
History course (300 level or higher)		3
Literature course (300-level or above) except ENGL/TEDU 386 or TEDU 387		3
Open electives		
Select any course.		20-28
Total Hours		120

1

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

2

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
MASC 101 Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MATH 131 Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts as open elective) or MATH 141 or Algebra with Applications	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations) Play course video for Focused Inquiry I	3
General education course (select BOK for natural sciences and AOI for scientific and logical reasoning)	3-4
Open elective	3
Term Hours:	15-16

Spring semester

ECON 203 Introduction to Economics (satisfies general education AOI for global perspectives)	3
HUMS 202 Choices in a Consumer Society	1
MASC 261 History and Development of Journalism	3
POLI 103 U.S. Government (satisfies general education AOI for diversities in the human experience)	3

UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) Play course video for Focused Inquiry II	3
Experiential fine arts	1-3
Open elective	1
Term Hours:	15-17

Sophomore year

Fall semester

ENGL 215 Reading Literature (satisfies general education BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)	3
MASC 203 Journalism Writing	3
STAT 208 Statistical Thinking (either satisfies general education quantitative foundations) or STAT 210 or Basic Practice of Statistics	3
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101	3
Term Hours:	15

Spring semester

HIST 103 Survey of American History	3
MASC 303 Reporting for Print and Web	3
MASC 363 Introduction to Broadcast Writing	3
MASC 367 Beginning Media Production	3
Foreign language 102	3
Term Hours:	15

Junior year

Fall semester

HIST 104 Survey of American History	3
MASC 274 Diversity in the Media (satisfies general education AOI for diversities in the human experience)	3
MASC 396 Mobile and Social Media Journalism	3
History course (300-level or above)	3
Open elective	3
Term Hours:	15

Spring semester

MASC 300 Technical Prowess	3
MASC 415 Advanced Media Production	3
MASC 460 Advanced Television Newsgathering	3
POLI or URSP course (300-level or higher)	3
Open elective	3
Term Hours:	15

Senior year

Fall semester

MASC 408 Communications Law	3
MASC 461 The Documentary or or Newscasting MASC 465	3
MASC elective (300-400 level)	3

Open electives	6
Term Hours:	15
Spring semester	
MASC 390 Ethical Problems in Mass Media	3
MASC 493 Fieldwork/Internship	3
MASC 499 Career Minded	3
Literature course (300-level or above) except ENGL/ TEDU 386 or ENGL 387	3
Open elective	3
Term Hours:	15
Total Hours:	120-123

The minimum number of credit hours required for this degree is 120.

Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/digital

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations. The journalism concentration provides students with the skills and practice necessary for careers in the news media.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for journalism students

MASC 101, MASC 203 and MASC 261, each with a minimum grade of C; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208), and natural sciences and scientific and logical reasoning requirements. (Completion of both ECON 210 and ECON 211 may substitute for ECON 203.)

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/digital

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3
MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 203	Journalism Writing	3
MASC 261	History and Development of Journalism	3
MASC 303	Reporting for Print and Web	3
MASC 305	Copy Editing	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Beginning Media Production	3
MASC 396	Mobile and Social Media Journalism	3
• Major electives		
Select six credits from these capstone courses. ^{1,2}		6
MASC 403	Advanced Reporting	
MASC 404	Specialized Project Reporting	
MASC 475	Capital News Service	
Ancillary requirements		
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ³	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)	3

HIST 103 & HIST 104	Survey of American History and Survey of American History	6
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) Basic Practice of Statistics	3
POLI or URSP course (300 level or higher)		3
Experiential fine arts ⁴		1-3
Foreign language through the 102 level (by course or placement)		0-6
History course (300 level or higher)		3
Literature course (300 level or higher) except ENGL/TEDU 386 or TEDU 387		3
Open electives		
Select any course.		23-31
Total Hours		120

1

These capstone courses may not be taken simultaneously without permission from the instructor.

2

Six credits of MASC 475, which is repeatable, will satisfy the capstone requirement.

3

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

4

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3

MATH 131 or MATH 141	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts as open elective) or Algebra with Applications	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
	General education course (select BOK for natural sciences and/or AOI for scientific and logical reasoning)	3
	Open elective	3

Term Hours: 15

Spring semester		
ECON 203	Introduction to Economics (satisfies general education and AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
MASC 261	History and Development of Journalism	3
POLI 103	U.S. Government (satisfies general education AOI for diversities in the human experience)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Experiential fine arts	1-3
	Open elective	1

Term Hours: 15-17

Sophomore year		
Fall semester		
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)	3
HIST 103	Survey of American History	3
MASC 203	Journalism Writing	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) or Basic Practice of Statistics	3
	Open elective	3

Term Hours: 15

Spring semester		
HIST 104	Survey of American History	3
MASC 303	Reporting for Print and Web	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Beginning Media Production	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 15

Junior year		
Fall semester		
MASC 300	Technical Prowess	3
MASC 396	Mobile and Social Media Journalism	3

Foreign language 101	3
History course (300-level or higher)	3
Open elective	3
Term Hours:	15
Spring semester	
MASC 274 Diversity in the Media (satisfies general education AOI for diversities in the human experience)	3
MASC 305 Copy Editing	3
MASC 475 Capital News Service or MASC 403 or Specialized Project Reporting or MASC 404	3
POLI or URSP course (300-level or higher)	3
Foreign language 102	3
Term Hours:	15
Senior year	
Fall semester	
MASC 404 Specialized Project Reporting or MASC 403 or Capital News Service or MASC 475	3
MASC 408 Communications Law	3
MASC elective (300-400 level)	3
Elective (300-400 level)	3
Open elective	3
Term Hours:	15
Spring semester	
MASC 390 Ethical Problems in Mass Media	3
MASC 493 Fieldwork/Internship	3
MASC 499 Career Minded	3
Literature course (300 level or higher) except ENGL/ TEDU 386 or ENGL 387	3
Open elective	3
Term Hours:	15
Total Hours:	120-122

The minimum number of credit hours required for this degree is 120.

Mass Communications, Bachelor of Science (B.S.) with a concentration in media production

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations. The media production concentration prepares students for behind-the-scenes careers in film, television, video, online and other media creating compelling stories and messages.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for media production students

MASC 101, MASC 255 and MASC 285, each with a minimum grade of C; and completion of UNIV 111, UNIV 112, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208 or STAT 210), and natural sciences and scientific and logical reasoning requirements. (Completion of both ECON 210 and ECON 211 may substitute for ECON 203.)

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in media production

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3

MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 255	Introduction to Media Production	3
MASC 285	Media Writing	3
MASC 367	Beginning Media Production	3
MASC 415	Advanced Media Production	3
MASC 440	Media Animation	3
MASC 466	Television Studio Production	3
MASC 484	Media Foundry	3
• Major electives		
MASC (300- or 400-level)		3
Ancillary requirements		
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ¹	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and AOI creativity, innovation and aesthetic inquiry)	3
HIST 103 or HIST 104	Survey of American History	3
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MGMT 321	Survey of Entrepreneurship	3
PHTO 290	Photography for Non-majors (satisfies experiential fine arts requirement)	1-3
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) Basic Practice of Statistics	3
POLI, HIST or URSP (300 level or higher)		3
Foreign language through the 102 level (by course or placement)		0-6
Literature course (300 level or higher) except ENGL/TEDU 386 or TEDU 387		3
Open electives		
Select any course.		29-37
Total Hours		120

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

The minimum number of credit hours required for this degree is 120.

Freshman year

Fall semester		Hours
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MATH 131 or MATH 141	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts as open elective) or Algebra with Applications	3
POLI 103	U.S. Government (satisfies general education AOI for diversities in the human experience)	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Open elective	3
Term Hours:		15

Spring semester

ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
MASC 255	Introduction to Media Production	3
MASC 274	Diversity in the Media (satisfies general education AOI for diversities in the human experience)	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	General education course (select BOK for natural sciences and AOI for scientific and logical reasoning)	3
Term Hours:		16

Sophomore year

Fall semester		Hours
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and AOI creativity, innovation and aesthetic inquiry)	3
HIST 103 or HIST 104	Survey of American History or Survey of American History	3
MASC 285	Media Writing	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) or Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15

¹

Spring semester

ENGL 304	Persuasive Writing	3
MASC 300	Technical Prowess	3
PHTO 290	Photography for Non-majors (satisfies experiential fine arts requirement)	1-3
Open electives		6

Term Hours: 13-15

Junior year**Fall semester**

MASC 367	Beginning Media Production	3
MASC 408	Communications Law	3
Foreign language 101		3
Literature course (300-level or higher) except ENGL 386/ TEDU 386 or TEDU 387		3
Open elective		3

Term Hours: 15

Spring semester

MASC 415	Advanced Media Production	3
MASC 440	Media Animation	3
MGMT 321	Survey of Entrepreneurship	3
POLI or URSP course (300-level or higher)		3
Foreign language 102		3
Open elective		1-3

Term Hours: 16-18

Senior year**Fall semester**

MASC 390	Ethical Problems in Mass Media	3
MASC 466	Television Studio Production	3
MASC 499	Career Minded	3
MASC elective (300- to 400-level)		3
Open electives		3

Term Hours: 15

Spring semester

MASC 484	Media Foundry	3
MASC 493	Fieldwork/Internship	3
Open electives (300- to 400-level if needed)		9

Term Hours: 15

Total Hours: 120-124

The minimum number of credit hours required for this degree is 120.

Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of four areas: advertising, journalism, media production or public relations. The public relations concentration is designed to prepare students for employment in industry, government, nonprofit associations and public relations agencies.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply tools and technologies appropriate for the communication professions in which they work
- Apply basic numerical and statistical concepts
- Think critically, creatively and independently
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications
- Demonstrate an understanding of professional ethical principles and work ethically
- Establish an environment that encourages, supports and reinforces professionalism at all levels of learning
- Understand concepts and apply theories in the use and presentation of images and information

Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have both a minimum cumulative GPA and a minimum major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

Foundation course work for public relations students

MASC 101; MASC 203 with a minimum grade of C; MASC 210 with a minimum grade of C; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208 OR STAT 210), and natural sciences and scientific and logical reasoning requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MASC 300	Technical Prowess	3
MASC 390	Ethical Problems in Mass Media	3
MASC 408	Communications Law	3
MASC 493	Fieldwork/Internship	3
MASC 499	Career Minded	3
• Concentration requirements		
MASC 203	Journalism Writing	3
MASC 210	Public Relations	3
MASC 333	Public Relations Technical Writing and Media Relations	3
MASC 335	Multimedia Production for Public Relations	3
MASC 336	Social Media for Public Relations	3
MASC 337	Public Relations Strategy	3
MASC 425	Public Relations Research Methods	3
MASC 439	Agency	3
• Major electives		
Select public relations electives from the approved list below or any additional MASC course		6
Ancillary requirements		
ECON 203	Introduction to Economics (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives) ¹	3
ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine art and AOI for creativity, innovation and aesthetic inquiry)	3
ENGL 304	Persuasive Writing	3
HIST 104	Survey of American History	3
HUMS 202	Choices in a Consumer Society	1
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MASC 274	Diversity in the Media (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MGMT 310	Managing People in Organizations	3
MKTG 301	Marketing Principles	3
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3

STAT 208	Statistical Thinking (either satisfies general education quantitative foundations)	3
or STAT 210	Basic Practice of Statistics	
POLI (300-level or higher) or upper-level writing (ENGL 310, ENGL 367 or ENGL 393)		3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Literature course (300-level or higher) except ENGL/TEDU 386 or TEDU 387		3
Open electives		
Select any course.		17-25
Total Hours		120

¹

Completion of both ECON 210 and ECON 211 may substitute for ECON 203; ECON 210 satisfies the same general education categories.

²

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Public relations electives

Course	Title	Hours
MASC 423	Tourism and Hospitality Public Relations	3
MASC 424	Sports and Entertainment Public Relations	3
MASC 433	Special Events	3
MASC 435	Crisis Communication	3
MASC 438	Organizational Communications	3
MASC 488	Strategic Health Communication	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
MASC 101	Mass Communications (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
MATH 131 or MATH 141	Introduction to Contemporary Mathematics (prerequisite for STAT 208) or Algebra with Applications	3
POLI 103	U.S. Government (satisfies general education AOI for diversities in the human experience)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Open elective		3
Term Hours:		16
Spring semester		
ECON 203	Introduction to Economics (satisfies general education and AOI for global perspectives)	3
HUMS 202	Choices in a Consumer Society	1
MASC 210	Public Relations	3
MASC 274	Diversity in the Media (satisfies general education and AOI for diversities in the human experience)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select BOK for natural sciences and AOI for scientific and logical reasoning)		3-4
Term Hours:		16-17

Sophomore year**Fall semester**

ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)	3
HIST 104	Survey of American History	3
MASC 203	Journalism Writing	3
STAT 208 or STAT 210	Statistical Thinking (either satisfies general education quantitative foundations) or Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15

Spring semester

ENGL 304	Persuasive Writing	3
MASC 300	Technical Prowess	3
MASC 333	Public Relations Technical Writing and Media Relations	3
MASC 337	Public Relations Strategy	3
Experiential fine arts		1-3
Term Hours:		13-15

Junior year**Fall semester**

MASC 336	Social Media for Public Relations	3
MASC 408	Communications Law	3
MASC 499	Career Minded	3
Foreign language 101		3
Literature course (300 level or higher) except ENGL/TEDU 386 or ENGL 387		3
Term Hours:		15

Spring semester

MKTG 301	Marketing Principles	3
MASC 335	Multimedia Production for Public Relations	3
MASC 390	Ethical Problems in Mass Media	3
Foreign language 102		3

Public relations elective		3
Term Hours:		15

Senior year**Fall semester**

MASC 425	Public Relations Research Methods	3
MASC 493	Fieldwork/Internship	3
POLI course (300 level or higher) or upper-level writing course (ENGL 310, ENGL 367 or ENGL 393)		3
Open elective		3
Public relations elective		3
Term Hours:		15

Spring semester

MASC 439	Agency	3
MGMT 310	Managing People in Organizations	3
Open electives		9
Term Hours:		15
Total Hours:		120-123

The minimum number of credit hours required for this degree is 120.

Media studies, minor in

The minor in media studies consists of a minimum of 18 credits in mass communications as described below, including a minimum of nine upper-level credits. To declare the minor, students must pass MASC 101 with a minimum grade of C and have a minimum cumulative GPA of 2.50. All courses counted toward the minor must be completed with a minimum grade of C; to graduate, students must have a minimum 2.50 minor GPA. Permission is required to enroll in all courses except MASC 101. All students in the minor in media studies program are required to register with the Robertson School of Media and Culture prior to beginning course work. Media studies course work will be distributed as follows:

Course	Title	Hours
Required courses		
MASC 101	Mass Communications	3
MASC 203 or MASC 204	Journalism Writing or Story	3
MASC 408	Communications Law	3
Elective courses		
Select nine credits from the following, prerequisites apply: 9		
MASC/INTL 151	Global Communications	
MASC 201	Curiousness	
MASC 210	Public Relations	
MASC 251	Global Health and Social Media	
MASC 291	Topics in Communications	
MASC 261	History and Development of Journalism	
MASC 300	Technical Prowess <small>Students can only take MASC 300, 301 or 334 once for credit</small>	
MASC 301	Graphics for Journalism <small>Students can only take MASC 300, 301 or 334 once for credit</small>	
MASC 317	Visual Acuteness	
MASC 334	Visual Communication and Design for Public Relations <small>Students can only take MASC 300, 301 or 334 once for credit</small>	
MASC 344	Data Journalism and Visualization	

MASC 359	International Media Coverage: The Middle East
MASC 380	History of Advertising
MASC 381	Great Advertising
MASC 390	Ethical Problems in Mass Media
MASC 423	Tourism and Hospitality Public Relations
MASC 424	Sports and Entertainment Public Relations
MASC 433	Special Events
MASC 474	Diversity in the Media
MASC 485	Web Site Design
MASC 491	Topics in Communications
MASC 493	Fieldwork/Internship

Total Hours 18

School of World Studies

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Richmond, Virginia 23284-2021
(804) 827-1111
worldstudies.vcu.edu (<http://www.worldstudies.vcu.edu>)

Amy Rector, Ph.D.

Associate professor and director

The School of World Studies is an interdisciplinary unit that explores the diversity of the human experience and prepares students to contribute to a healthy, equitable and sustainable world. With training in the humanities, social sciences and natural sciences, school faculty conduct research on language, religion, film, literature, politics, economics and the environment, and their relationship to local and global movements for racial, social and environmental justice. The World School offer majors in anthropology (<https://worldstudies.vcu.edu/academic-programs/anthropology/>), foreign language (<https://worldstudies.vcu.edu/academic-programs/foreign-languages/>), international studies (<https://worldstudies.vcu.edu/academic-programs/international-studies/>) and religious studies (<https://worldstudies.vcu.edu/academic-programs/religious-studies/>), as well as a number of minors including European studies, Italian studies, Latin American studies, Middle Eastern and Islamic studies, Russian studies and world cinema. Course instruction is enriched by a range of opportunities to gain real-world experience. School of World Studies majors acquire the critical knowledge, analytic abilities, experience and communication skills to succeed in all aspects of life and participate in the project of building a generous world for all.

See what SWS students (<https://worldstudies.vcu.edu/meet-our-students-alumni/student-spotlights/>) and alumni (<https://worldstudies.vcu.edu/meet-our-students-alumni/alumni-profiles/>) are doing to make this vision of the world real.

Languages

Learning a language is incredibly rewarding because it increases mental acuity and global cultural competence and enhances opportunities for cross-cultural dialogue and collaboration. Language proficiency opens doors for personal as well as professional interaction from right here in

Richmond to all reaches of the globe. The School of World Studies offers courses in:

- Arabic
- Chinese
- French
- German
- Italian
- Russian
- Spanish

In cases where the appropriate level of instruction is unavailable, or students are interested in pursuing languages not offered at VCU, the School of World Studies Advising Office will assist in identifying language study options at other U.S. institutions or abroad.

Foreign language courses

Students planning to take a foreign language course at VCU must take the placement test in order to determine proper course selection. Specific information about the placement test (<http://www.worldstudies.vcu.edu/academics/foreign-languages/language-placement-testing/>) is available on the School of World Studies website. Placement scores determine at which skill level the students begins course work in the respective language. Students who test above a specific course level continue with higher level courses to fulfill degree or graduation requirements.

Students who wish to complete a language through the intermediate level or higher are required to **consecutively** complete 101, 102 and 201 or the equivalent through placement. Students may then choose either 202 or 205 to complete the intermediate level.

Foreign language requirement and native speaker information

All students within the College of Humanities and Sciences are required to meet a foreign language requirement either through the 102 level for the college general education program or through a higher level as specified by the individual program. Specific information on assessment (<https://worldstudies.vcu.edu/for-students/language-placement-testing/native-speaker/>) to waive the foreign language requirement is available on the School of World Studies website.

Experiential learning and study abroad

World ePass

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. As part of this commitment, each major within the school is required to complete a World ePass (<https://worldstudies.vcu.edu/for-students/academic-advising/world-epass/>) portfolio.

The intention of the World ePass is to highlight each student's breadth of experience and skills gleaned beyond the core curriculum: cultural competencies, experiential learning opportunities, participation in student research, presentation at conferences, international engagement, multicultural campus activities, foreign language acquisition and academic achievements.

Students obtain initial information and guidance on creating their World ePass through an introductory video (<https://vimeo.com/354730257/5c4beb6e72/>).

The World ePass portfolio content requirements include professional preparation, transferable skills articulation, academic career highlights, experiential learning experiences and global citizenship. Once students have started the process of ePass creation, they submit the site address through the World ePass submission site.

All experiential learning opportunities must receive prior approval from the SWS Advising Office. These include internships, service-learning courses, certain noncredit options and study abroad.

World ePass completion

Evaluation of the World ePass is on a pass/fail basis. Prior to graduation with a degree from the VCU School of World Studies, the World ePass must be reviewed and approved, with input from SWS faculty, by the SWS advising coordinator.

Study abroad

All School of World Studies students are encouraged to participate in a study abroad program.

Opportunities range from a summer intensive program to a semester or academic year-length experience. Summer study-abroad programs provide students with opportunities for short-term immersion in the language, culture and civilization of the countries they visit. Information about all current study abroad opportunities (<https://global.vcu.edu/abroad/>) can be found on the Global Education Office website. For more information about World Studies faculty-led study abroad programs, visit the School of World Studies website (<https://worldstudies.vcu.edu/>).

- Anthropology, Bachelor of Science (B.S.) (p. 340)
- Foreign Language, Bachelor of Arts (B.A.) with a concentration in:
 - Dual languages (p. 343)
 - French (p. 345)
 - German (p. 348)
 - Spanish (p. 352)
- International Studies, Bachelor of Arts (B.A.) with a concentration in:
 - European studies (p. 355)
 - General studies (p. 358)
 - International social justice studies (p. 360)
 - Latin American studies (p. 363)
 - World cinema (p. 366)
- Religious Studies, Bachelor of Arts (B.A.) (p. 368)
- Anthropology, minor in (p. 371)
- Asian and Chinese studies, minor in (p. 371)
- European studies, minor in (p. 372)
- French, minor in (p. 373)
- German, minor in (p. 373)
- International social justice studies, minor in (p. 373)
- Italian studies, minor in (p. 374)
- Latin American studies, minor in (p. 374)
- Middle Eastern and Islamic studies, minor in (p. 375)
- Religious studies, minor in (p. 375)
- Russian studies, minor in (p. 376)
- Spanish, minor in (p. 376)
- World cinema, minor in (p. 376)
- Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate) (p. 370)

Anthropology, Bachelor of Science (B.S.)

worldstudies.vcu.edu/academics/anthropology (<http://worldstudies.vcu.edu/academics/anthropology/>)

The Bachelor of Science in Anthropology curriculum seeks to ensure that each student develops a solid foundation in the basic principles, theories and techniques of analysis. Since students majoring in anthropology vary in their interests and career goals, the curriculum allows for a great deal of flexibility developing individual courses of study. Students who are interested in pursuing graduate studies in anthropology will usually take more than the minimum number of upper-level courses. The department provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships and honors research.

The Bachelor of Science in Anthropology requires a minimum of 120 credits, with at least 35 of those credits in anthropology averaging a minimum GPA of 2.25. Students must take at least 25 credits in upper-level (300, 400 or 500) ANTH courses. However, a student with a particular anthropological interest that can be best served by courses without the ANTH prefix may suggest a relevant selection of up to six elective credits from such classes to be counted toward the major. Alternatively, in addition to the three experiential credits fulfilling collateral requirements, a maximum of six credits from internships and/or independent studies may be counted toward the elective degree requirements. A plan for such selection must be presented to and approved by the program coordinator in the student's junior year or, for those students entering the program at the junior level, at a time stipulated by the program coordinator.

In order to begin upper-level course work in any foreign language, students must have consecutively completed 101, 102, 201, and 202 or 205 courses in a respective foreign language or prove the equivalent proficiency level through placement testing.

Anthropology majors are strongly encouraged to complete a minor, preferably one offered in World Studies. Students should refer to the listing in the general description of the School of World Studies.

Student learning outcomes

1. Global knowledge, citizenship and ethics: Anthropology graduates will recognize and describe cultural, economic, informational and social interdependencies that exist among nations and cultures today, including an ethical understanding of the effects of such factors as racial, ethnic and gender differences.
2. Scientific and anthropological literacy: Students will evaluate and assess scientific findings by employing concepts and methodologies of modern science as applied to anthropological questions.
3. Advanced oral and written communication skills: Graduates will effectively communicate ideas about anthropological tenets in both oral and written formats.
4. Research methods and design skills: Students will demonstrate the ability to design appropriate anthropological research questions and apply research methodologies to answer those questions.
5. Critical-thinking skills: Graduates will critically evaluate their own cultural and biological histories and experiences, as well as those of others.
6. Experiential learning: Students will synthesize and apply anthropological tenets in experiential learning opportunities including

study abroad, internships, service-learning, independent studies or field schools.

Upon completing this program, students will know and know how to do the following:

The goal of the anthropology program is to impart to students a global awareness and appreciation of the full range of human biological and cultural diversity across time and space, as well as of the underlying similarities derived from humans' common evolutionary origins.

Students gain proficiency in the knowledge and application of disciplinary and interdisciplinary research methods and analytic concepts, and are trained to develop a holistic and comparative perspective on the human condition, with regard to the cultural, biological, archaeological and linguistic dimensions of anthropological inquiry.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Honors in anthropology

Majors in the anthropology program may earn a Bachelor of Science degree with honors in anthropology. Participation in honors thesis research is available to outstanding senior majors and involves the preparation of a senior thesis during the last two semesters of the baccalaureate degree program.

In order to participate in the program, students must meet program entrance requirements, identify a project mentor and receive approval for a project proposal. Honors will be awarded following acceptance of the thesis by the Honors Thesis Committee. The committee will consist of, at a minimum, the project mentor, one other member of the anthropology faculty and one faculty member from outside of the anthropology program.

The project may involve any recognized anthropological topic, theory and/or method that promises to enhance the student's disciplinary perspective, skills and creativity. The project may involve an extension of work initiated in a course, an entirely new project or a collaborative project with the faculty mentor. If the project is an extension of work initiated in a course or developed collaboratively with the mentor, independent, separate, substantial development of the topic in the thesis should be evident in the final product. The thesis should reflect work of high quality for a senior-level course.

Students majoring in anthropology are eligible to participate in the departmental honors program if they have maintained a minimum 3.0 overall GPA and a minimum of 3.3 GPA in the major. Application materials consist of transcripts documenting the required GPAs, a five-to-seven page proposal (including a history and description of the proposed project, an annotated bibliography of relevant sources, a work plan, and a schedule for completion of the project) and a letter of endorsement from the faculty member who has agreed to act as project mentor. Applications must be made and project approval received no later than the first two weeks of classes in the semester in which the project will commence. A departmental committee will review the application materials, meet with the candidate to discuss the project proposal as needed and render an admission decision. Once admitted, program

participants will enroll in ANTH 497. The course may be included in the required hours for the major.

Students will complete six credit hours (over two sequential semesters in their senior year) in ANTH 497 and ANTH 498. The student's work will be evaluated by the project mentor and a departmental committee at the end of the first semester (ANTH 497) and a grade will be assigned. If allowed to continue, the student will enroll in ANTH 498 the subsequent semester. At the completion of ANTH 498, the completed senior honors thesis will be submitted to the HTC following its acceptance by the faculty mentor and confirmation that the candidate has maintained the requisite GPAs.

Upon submission of the thesis, the student will make an oral presentation (to be made no later than two weeks before the end of classes) to the HTC and other faculty as deemed appropriate, summarizing the research procedures and findings. The HTC will then evaluate the thesis for the award of honors. In order to receive honors, the thesis must be evaluated as deserving of a grade of A. Whether or not honors are awarded, a final grade will be submitted for ANTH 498. The awarding of honors for the thesis will earn an Honors Certificate from the department and notation of the student's standing as an honors graduate on the final grade transcript. Students must submit a final copy of the thesis to both the department and the VCU Libraries no later than the last day of classes.

Degree requirements for Anthropology, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements ¹		
ANTH 105/INTL 104	Introduction to Archaeology	3
ANTH 301/BIOL 341	Human Evolution	4
ANTH 302	Archaeological Theory	3
ANTH 399	Junior Seminar	1
ANTH 454	Theory in Cultural Anthropology	3
ANTH 490	Anthropology Senior Capstone	3
• Additional major requirements		
Select two from:		6
ANTH 210	Biological Anthropology	
ANTH 220	Cultural Anthropology	
ANTH 230	Anthropological Linguistics	
Methods requirement		
Select two from:		6
ANTH 303	Archaeological Methods and Research Design	
ANTH 315	Field Methods and Research Design in Cultural Anthropology	
ANTH 328	Language, Culture and Cognition	
• Major electives ²		
Select at least two courses from one of the elective groups below.		6

Ancillary requirements

ANTH/INTL 103	Introduction to Anthropology (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
HUMS 202	Choices in a Consumer Society	1
MATH 131	Introduction to Contemporary Mathematics (or higher numbered math course with a minimum grade of C; satisfies general education quantitative foundations)	3
STAT 210	Basic Practice of Statistics	3
Experiential fine arts ³		1-3
Experiential learning		
Select one of the following:		0-3
Major-specific service-learning course		
Study abroad program		
Internship (ANTH 398, ANTH 493, FRLG 493, INTL 493, WRLD 493)		
Foreign language through the 102 level (by course or placement)		0-6
World ePass completion		0
Open electives		
Select any course.		39-50
Total Hours		120

1

Students must attain a minimum grade of C in each of the core anthropology courses.

2

Students must receive approval through the SWS Advising Office for topics courses counting toward the appropriate elective group.

3

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

ANTH electives

Course	Title	Hours
Select at least two courses from one of the following elective groups.		
Biological anthropology		
ANTH 307	Human Osteology	4
ANTH 309	Gender and Global Health	3
ANTH 310	Forensic Anthropology	3
ANTH 380	Medical Anthropology	3
ANTH 383	Evolutionary Medicine and Anthropology	3
ANTH 391	Topics in Anthropology ²	3
ANTH 398	Field Investigations in Anthropology	1-8
ANTH 403	Primatology	4

ANTH 469	Human Dentition: ID and Anthropology	1-3
ANTH 491	Advanced Topics in Anthropology ²	1-3

Archaeology

ANTH 321	Gender and Culture in Africa	3
ANTH 355	Death and Burial	3
ANTH 370	Visualizing and Exhibiting Anthropology	3
ANTH 375	Field Archaeology	6
ANTH 387	Environmental Archaeology	3
ANTH 388	African Archaeology	3
ANTH 389	World Archaeology	3
ANTH 391	Topics in Anthropology ²	3
ANTH 394	Historical Archaeology	3
ANTH 398	Field Investigations in Anthropology	1-8
ANTH 491	Advanced Topics in Anthropology ²	1-3

Cultural/anthropological linguistics

ANTH 200	Introduction to African Societies	3
ANTH 309	Gender and Global Health	3
ANTH 321	Gender and Culture in Africa	3
ANTH 330	Language and Prehistory	3
ANTH 348	South American Ethnography	3
ANTH 349	Rethinking a Continent: Latin America	3
ANTH 355	Death and Burial	3
ANTH 364	Mythology and Folklore	3
ANTH 383	Evolutionary Medicine and Anthropology	3
ANTH 390	Introduction to Linguistics	3
ANTH 391	Topics in Anthropology ²	3
ANTH 398	Field Investigations in Anthropology	1-8
ANTH 425	Religion, Magic and Witchcraft	3
ANTH 450	Cross-cultural Communication	3
ANTH 491	Advanced Topics in Anthropology ²	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
ANTH/INTL 103	Introduction to Anthropology (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 131	Introduction to Contemporary Mathematics (or higher level MATH course; satisfies general education quantitative foundations)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Foreign language 101		3
Open elective		3
Term Hours:	16	

Spring semester

ANTH 105/ INTL 104	Introduction to Archaeology	3
HUMS 202	Choices in a Consumer Society	1
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for diversities in the human experience)		3
Term Hours:		16

Sophomore year

Fall semester

ANTH 210 or ANTH 220 or ANTH 230	Biological Anthropology or Cultural Anthropology or Anthropological Linguistics	3
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 201		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
Term Hours:		15

Spring semester

ANTH 210 or ANTH 220 or ANTH 230	Biological Anthropology or Cultural Anthropology or Anthropological Linguistics	3
Experiential fine arts		1-3
Foreign language 202		3
General education course (select BOK for humanities/fine arts if needed)		3
General education course		3
Term Hours:		13-15

Junior year

Fall semester

ANTH 301/ BIOL 341	Human Evolution	4
ANTH 302	Archaeological Theory	3
Open electives		9
Term Hours:		16

Spring semester

On-campus or study abroad semester:		
ANTH 399	Junior Seminar	1
Methods requirement		3

Open electives	12
Term Hours:	16

Summer semester

Study abroad, recommended; credits completed during study abroad will decrease open electives needed in subsequent semesters	0-6
Term Hours:	0-6

Senior year

Fall semester

ANTH 454	Theory in Cultural Anthropology	3
ANTH 493 or ANTH 398	Anthropology Internship (or anthropology elective) or Field Investigations in Anthropology	1-3
Major or open elective		3
Methods requirement		3
Open electives		3
World ePass completion by graduation check-out date		
Term Hours:		13-15

Spring semester

ANTH 490	Anthropology Senior Capstone	3
ANTH 493 or ANTH 398	Anthropology Internship (or anthropology elective) or Field Investigations in Anthropology	1-3
Major electives		6
Open electives		5-6
Term Hours:		15-18
Total Hours:		120-133

The minimum number of credit hours required for this degree is 120.

Foreign Language, Bachelor of Arts (B.A.) with a concentration in dual languages

In today's world, language learning is more important than ever. The ability to navigate across diverse language, ethnic, racial and cultural borders allows connection with others, helping create a more inclusive and mutually respectful society. Additionally, employers the world over value the communication skills, cultural competence and practical experiences language students acquire through course work, internships, service learning and study abroad. Proficiency in a second language offers special practical benefits: VCU graduates with language skills are among the more qualified candidates for jobs in international businesses, nonprofits and government agencies. They also qualify for jobs as language teachers in schools, where they often serve as role models, mentors and leaders.

VCU's B.A. in Foreign Language curriculum allows students to focus on either one or two languages, including the option to combine their major with other disciplines as they work with advisers to plan for their future careers. VCU course work leads majors to explore cultural traditions and historical developments in various parts of the world, and to pursue applied vocabulary and practices that they can use in real-world situations locally, nationally, globally and virtually. Special effort is made to develop intercultural communication competence.

Becoming a language major is one of the best decisions a student can make! Most will find a seamless transition to VCU from high school or

community college programs. Placement testing and the transfer of Advanced Placement, IB and other college-level courses from high school or from a community college can shorten time to degree completion and make it easier for students to pursue dual or double majors and build on minors or certificate programs from across VCU.

Student learning outcomes

- Development of oral and aural communication skills in context
- Development of written communication skills
- Development of critical and analytical reading skills
- Development of historical, literary and cultural competency

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in Foreign Languages with a concentration in dual languages, students must complete 39 credits within the major (18 credits in a target language and 15 credits in a second language), 27 credits of which must be upper-level (300-level or above), with a minimum major GPA of 2.25.

All foreign language majors, students transferring credits from study abroad and transfer students who major in a foreign language must include in their target-language course work a minimum of 12 VCU credits. Both credit and distribution requirements (minimum of 11 courses in target languages) for the concentration must be satisfied.

Foreign language majors who plan on becoming language teachers in the K-12 school system are required to complete a total of 30 credits of upper-level (300- and 400-level) course work in one target language to meet certification requirements.

Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in dual languages

Course	Title	Hours
General education (p. 77)		
Select 12 -13 credits from foundations of learning and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages	3
• Additional major requirements		
Target language course work ^{1,2}		18
Second language course work ^{1,2}		15
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts (course offered through the School of the Arts)		1-3

• Experiential learning	0-3
Select one of the following:	
Major-specific service-learning course	
Study abroad program	
Internship (FRLG 493, INTL 493, WRLD 493 or other preapproved internship opportunities)	
• Foreign language through the 102 level in both languages (by course or placement) ³	0-12
• World ePass ⁴	
Open electives	
Select any course	32-49
Total Hours	120

1

Up to six credits of 200-level course work (201, 202 or 205) in each language can count within these credits.

2

Higher level placement score for 200-level courses (201 and 202) determines the starting point of the degree. Students who test above the course level fulfill the surpassed course credits with 300- or 400-level electives.

3

In order to begin upper-level course work in any foreign language, students must have consecutively completed these courses or must prove the equivalent proficiency level through placement testing.

4

Students must complete the School of World Studies World ePass.

The minimum number of credit hours required for this degree is 120.

Freshman year		Hours
Fall semester		
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education courses		6
General education course (select quantitative foundations)		3-4
Target language 101		3
Term Hours:		15-16
Spring semester		
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education courses		9
Target language 102		3
Term Hours:		15

Sophomore year

Fall semester		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Open elective		3
Second language 101		3
Target language 201		3
Term Hours:		15
Spring semester		
HUMS 202	Choices in a Consumer Society	1
WRLD 302	Communicating Across Cultures	3
Experiential fine arts course offered through the School of the Arts		1-3
Second language 102		3
Target language 202		3
Open electives		2-4
Term Hours:		15
Junior year		
Fall semester		
Second language 201		3
Target language 300 (composition and communication)		3
Target language 305, 307 or 311 (oral-communication)		3
Open electives		6
Term Hours:		15
Spring semester		
On-campus or study abroad semester		
Second language 202		3
Target language 301 (self and society: effective writing)		3
Open electives		9
Term Hours:		15
Summer semester		
Study abroad (recommended):		
Upper-level courses in either target language that meet concentration, elective or experiential learning requirements		0-6
(Note that credits completed during study abroad will decrease open electives needed in subsequent semesters.)		
Term Hours:		0-6
Senior year		
Fall semester		
Target language 300-level course		3
Second language 300 (composition and communication)		3
Second language 305, 307 or 311 (oral communication)		3
Open electives		6
World ePass completion		0
Term Hours:		15
Spring semester		
WRLD 490	Seminar in World Cultures and Languages (capstone)	3
Second language 301 (self and society: effective writing)		3

Electives (300-level courses in either or both languages or open electives)	9
Term Hours:	15
Total Hours:	120-127

The minimum number of credit hours required for this degree is 120.

Foreign Language, Bachelor of Arts (B.A.) with a concentration in French

worldstudies/languages (<https://worldstudies.vcu.edu/academic-programs/foreign-languages/>)

In today's world, language learning is more important than ever. The ability to navigate across diverse language, ethnic, racial and cultural borders allows connection with others, helping create a more inclusive and mutually respectful society. Additionally, employers the world over value the communication skills, cultural competence and practical experiences language students acquire through course work, internships, service learning and study abroad. Proficiency in a second language offers special practical benefits: VCU graduates with language skills are among the more qualified candidates for jobs in international businesses, nonprofits and government agencies. They also qualify for jobs as language teachers in schools, where they often serve as role models, mentors and leaders.

VCU's B.A. in Foreign Language curriculum allows students to focus on either one or two languages, including the option to combine their major with other disciplines as they work with advisers to plan for their future careers. VCU course work leads majors to explore cultural traditions and historical developments in various parts of the world, and to pursue applied vocabulary and practices that they can use in real-world situations locally, nationally, globally and virtually. Special effort is made to develop intercultural communication competence.

Becoming a language major is one of the best decisions a student can make! Most will find a seamless transition to VCU from high school or community college programs. Placement testing and the transfer of Advanced Placement, IB and other college-level courses from high school or from a community college can shorten time to degree completion and make it easier for students to pursue dual or double majors and build on minors or certificate programs from across VCU.

Student learning outcomes

- Development of oral and aural communication skills in context
- Development of written communication skills
- Development of critical and analytical reading skills
- Development of historical, literary and cultural competency

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete 39 credits within the major, 33 credits of which must be upper-level (300-level or above), with a minimum major GPA of 2.25.

All foreign language majors, students transferring credits from study abroad and transfer students who major in a foreign language must include in their target-language course work a minimum of 12 VCU credits. Both credit and distribution requirements (minimum of 11 courses in target language) for the concentration must be satisfied.

Foreign language majors who plan on becoming language teachers in the K-12 school system are required to complete a total of 30 credits of upper level (300- and 400-level) course work in one target language to meet certification requirements.

Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in French

Course	Title	Hours
General education (p. 77)		
Select 12 -13 credits from foundations of learning and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages	3
• Additional major requirements		
FREN 201	Intermediate French I (or higher level based on placement test score) ¹	3
FREN 202	Intermediate French II (or higher level based on placement test score) ¹	3
or FREN 205	Intermediate Conversation	
FREN 300	Communication and Composition	3
FREN 301	Self and Society: Effective Writing	3
FREN 305	Oral Communication	3
or FREN 307	French Conversation and Film	
FREN 320	French Civilization and Culture I	3
FREN 321	French Civilization and Culture II	3
FREN 330	Survey of Literature	3
FREN 331	Survey of Literature	3
• Major electives		
Select FREN courses (400 level or higher); may include up to three credits of FRLG 493		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts (course offered by the School of the Arts)		1-3
• Experiential learning		
0-3		
Select one of the following:		
Major-specific service-learning course		
Study abroad program		
Internship (FRLG 493, INTL 493, WRLD 493 or other preapproved internship opportunities)		

- Foreign language through the 102 level (by course or placement)² 0-6
- World ePass³

Open electives

Select any course	38-49
Total Hours	120

1

Higher level placement score for these 200-level courses determines the starting point of the degree. Students who test above the course level fulfill the surpassed course credits with 300- or 400-level electives.

2

In order to begin upper-level course work in any foreign language, students must have consecutively completed these courses or must prove the equivalent proficiency level through placement testing.

3

Students must complete the School of World Studies World ePass.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
FREN 101 Beginning French I	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education course (select quantitative foundations)	3-4
General education course (select AOI for global perspectives)	3
General education course (select AOI for diversities in the human experience)	3
Term Hours:	15-16

Spring semester

FREN 102 Beginning French II	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
General education course (select AOI for scientific and logical reasoning)	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:	15

Sophomore year

Fall semester

FREN 201	Intermediate French I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK to complete breadth of knowledge requirement)		6
Open elective		3

Term Hours: 15

Spring semester

FREN 202	Intermediate French II	3
HUMS 202	Choices in a Consumer Society	1
WRLD 302	Communicating Across Cultures	3
Experiential fine arts (course offered by the School of the Arts)		1-3
Open electives		5-7

Term Hours: 15

Junior year

Fall semester

FREN 300	Communication and Composition	3
FREN 305	Oral Communication	3
or French Conversation and Film		
FREN 307		
FREN 320	French Civilization and Culture I	3
Open electives		6

Term Hours: 15

Spring semester

On-campus or study abroad semester

FREN 301	Self and Society: Effective Writing	3
FREN 321	French Civilization and Culture II	3
FREN 331	Survey of Literature	3
Open electives		6

Term Hours: 15

Summer semester

Study abroad (recommended):

Upper-level FREN courses that meet concentration, elective or experiential learning requirements		0-6
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(Note that credits completed during study abroad will decrease open electives needed in subsequent semesters.)

Term Hours: 0-6

Senior year

Fall semester

FREN 330	Survey of Literature (if not taken abroad)	3
FRLG 493	World Languages Internship (or other experiential learning opportunity)	3
FREN elective (400 level)		3
Open electives		6
World ePass completion		0

Term Hours: 15

Spring semester

FRLG 493	World Languages Internship (or FREN elective at 400 level or above)	3
WRLD 490	Seminar in World Cultures and Languages (capstone)	3

Open electives 9

Term Hours: 15

Total Hours: 120-127

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.S.

The accelerated B.A. and M.S. program allows qualified students to earn both the B.A. in Foreign Language with a concentration in French and M.S. in Business with a concentration in marketing management in a minimum of five years by completing up to 12 credit hours of approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to three credit hours of graduate courses toward both the B.A. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 147 credits rather than the 150 credits necessary if the two degrees are pursued separately.

In their senior year students would also take up to nine credit hours of graduate-level foundations courses, which are prerequisites for the graduate program.

Students holding these degrees will be very competitive due to the combined knowledge and skills in language, culture and business and will be well prepared for success in an increasingly global marketplace.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including WRLD 302 and 21 credits earned at the 300-level in FREN; an overall GPA of 3.25; and a GPA of 3.0 in the major course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for the spring semester admission and no later than July 1 for fall semester admission. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Two reference letters (at least one from a School of World Studies faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the M.S. in Business with a concentration in marketing management program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate School of World Studies adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Foreign Language degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion

of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply toward open elective credits for the undergraduate degree. Three of these credits, MKTG 672, are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. Nine credits are foundation courses for the graduate program and apply to the undergraduate degree only.

The graduate business courses that may be taken as an undergraduate once a student is admitted to the program – and how they apply – are shown in the table below.

Course	Title	Hours
ACCT 507	Fundamentals of Accounting (graduate foundation; satisfies open elective in undergraduate program)	3
MKTG 672	Influencing Consumer Behavior (shared between undergraduate and graduate programs)	3
FIRE 520	Financial Concepts of Management (graduate foundation; satisfies open elective in undergraduate program)	3
SCMA 524	Statistical Fundamentals for Business Management (graduate foundation; satisfies open elective in undergraduate program)	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
FREN 300	Communication and Composition	3
FREN 305 or FREN 307	Oral Communication French Conversation and Film	3
FREN 320	French Civilization and Culture I	3
Open electives		6
Term Hours:		15
Spring semester (on-campus or study abroad semester)		
FREN 301	Self and Society: Effective Writing	3
FREN 321	French Civilization and Culture II	3
FREN 331	Survey of Literature	3
Open electives		6
Term Hours:		15
Senior year		
Fall semester		
ACCT 507	Fundamentals of Accounting	3
FREN 330	Survey of Literature	3
FRLG 493	World Languages Internship (or other experiential learning opportunity)	3
SCMA 524	Statistical Fundamentals for Business Management	3

FREN elective (400-level)		3
World ePass completion		0
Term Hours:		15
Spring semester		
FIRE 520	Financial Concepts of Management	3
MKTG 672	Influencing Consumer Behavior	3
FRLG 493	World Languages Internship (or 400-level or higher FREN elective)	3
WRDL 490	Seminar in World Cultures and Languages	3
Elective (any subject, 400-level or higher)		3
Term Hours:		15
Fifth year		
Fall semester		
MKTG 671	Marketing Management	3
MKTG 675	Digital Marketing	3
MKTG 679	Brand Strategy	3
Electives		6
Term Hours:		15
Spring semester		
MKTG 657	Market Planning Project	3
Electives		9
Term Hours:		12

Foreign Language, Bachelor of Arts (B.A.) with a concentration in German

worldstudies/languages (<https://worldstudies.vcu.edu/academic-programs/foreign-languages/>)

In today's world, language learning is more important than ever. The ability to navigate across diverse language, ethnic, racial and cultural borders allows connection with others, helping create a more inclusive and mutually respectful society. Additionally, employers the world over value the communication skills, cultural competence and practical experiences language students acquire through course work, internships, service learning and study abroad. Proficiency in a second language offers special practical benefits: VCU graduates with language skills are among the more qualified candidates for jobs in international businesses, nonprofits and government agencies. They also qualify for jobs as language teachers in schools, where they often serve as role models, mentors and leaders.

VCU's B.A. in Foreign Language curriculum allows students to focus on either one or two languages, including the option to combine their major with other disciplines as they work with advisers to plan for their future careers. VCU course work leads majors to explore cultural traditions and historical developments in various parts of the world, and to pursue applied vocabulary and practices that they can use in real-world situations locally, nationally, globally and virtually. Special effort is made to develop intercultural communication competence.

Becoming a language major is one of the best decisions a student can make! Most will find a seamless transition to VCU from high school or community college programs. Placement testing and the transfer of Advanced Placement, IB and other college-level courses from high school or from a community college can shorten time to degree completion and

make it easier for students to pursue dual or double majors and build on minors or certificate programs from across VCU.

Student learning outcomes

- Development of oral and aural communication skills in context
- Development of written communication skills
- Development of critical and analytical reading skills
- Development of historical, literary and cultural competency

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete at least 39 credits within the major, 33 credits of which must be upper-level (300-level or above), with a minimum major GPA of 2.25.

All foreign language majors, students transferring credits from study abroad and transfer students who intend to major in a foreign language must include in their target-language course work a minimum of 12 VCU credits. Both credit and distribution requirements (minimum of 11 courses in target language) for the concentration must be satisfied.

Foreign language majors who plan on becoming language teachers in the K-12 school system are required to complete a total of 30 credits of upper level (300- and 400-level) course work in one target language to meet certification requirements.

Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in German

Course	Title	Hours
General education (p. 77)		
Select 12 -13 credits from foundations of learning and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages	3
• Additional major requirements		
GRMN 201	Intermediate German I ¹	3
GRMN 202	Intermediate German II ¹	3
GRMN 300	Communication and Composition	3
GRMN 301	Self and Society: Effective Writing	3
GRMN 305	Oral Communication	3
or GRMN 307	German Conversation and Film	
or GRMN 311	German Through the Media	

GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
GRMN 321	From Faust to Nazism: Civilization and Literature II	3
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	3

• Major electives		
Select 300-level (or higher) German course		3
Select GRMN courses (400 level or higher); may include up to three credits of FRLG 493		6

Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts (course offered by the School of the Arts)		1-3

• Experiential learning		0-3
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Select one of the following:		
Major-specific service-learning course		
Study abroad program		

Internship (FRLG 493, INTL 493, WRLD 493 or other preapproved internship opportunities)		
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• Foreign language through the 102 level (by course or placement) ²		0-6
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• World ePass ³		
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Open electives		
Select any course		38-49

Total Hours		120
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¹ Higher level placement score for these 200-level courses determines the starting point of the degree. Students who test above the course level fulfill the surpassed course credits with 300- or 400-level electives.

² In order to begin upper-level course work in any foreign language, students must have consecutively completed these courses or must prove the equivalent proficiency level through placement testing.

³ Students must complete the School of World Studies World ePass.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year			Hours
Fall semester			
GRMN 101	Beginning German I		3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)		3
Play course	video for Focused Inquiry I		
General education course (select quantitative foundations)			3-4

General education course (select AOI for global perspectives)	3
General education course (select AOI for diversities in the human experience)	3

Term Hours: 15-16

Spring semester

GRMN 102	Beginning German II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select BOK to complete breadth of knowledge requirement)		3

Term Hours: 15

Sophomore year

Fall semester

GRMN 201	Intermediate German I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		6

Term Hours: 15

Spring semester

GRMN 202	Intermediate German II	3
HUMS 202	Choices in a Consumer Society	1
WRLD 302	Communicating Across Cultures	3
Experiential fine arts (course offered by the School of the Arts)		1-3
Open electives		5-7

Term Hours: 15

Junior year

Fall semester

GRMN 300	Communication and Composition	3
GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
or		
GRMN 322	or From Kafka's World to the EU: Civilization and Literature III	
Open electives		9

Term Hours: 15

Spring semester

On-campus or study abroad semester		
GRMN 301	Self and Society: Effective Writing	3
GRMN 321	From Faust to Nazism: Civilization and Literature II	3
GRMN upper-level elective		3
Open electives		6

Term Hours: 15

Summer semester

Study abroad (recommended):		
Upper-level GRMN courses that meet concentration, elective or experiential learning requirements		0-6
WRLD 391 on VCU faculty-led study abroad program (meets experiential learning requirement)		0-3

(Note that credits completed during study abroad will decrease open electives needed in subsequent semesters.)

Term Hours: 0-9

Senior year

Fall semester

FRLG 493	World Languages Internship (or other experiential learning opportunity)	3
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	3
or		
GRMN 320	or From the Vandals to Kant: Civilization and Literature I	
GRMN 400-level elective		3
Open electives		6
World ePass completion		0

Term Hours: 15

Spring semester

WRLD 490	Seminar in World Cultures and Languages (capstone)	3
GRMN 400-level elective		3
Open electives		9

Term Hours: 15

Total Hours: 120-130

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.S.

The accelerated B.A. and M.S. program allows qualified students to earn both the B.A. in Foreign Language with a concentration in German and M.S. in Business with a concentration in marketing management in a minimum of five years by completing up to 12 credit hours of approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to three credit hours of graduate courses toward both the B.A. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 147 credits rather than the 150 credits necessary if the two degrees are pursued separately.

In their senior year students would also take up to nine credit hours of graduate-level foundations courses, which are prerequisites for the graduate program.

Students holding these degrees will be very competitive due to the combined knowledge and skills in language, culture and business and will be well prepared for success in an increasingly global marketplace.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including WRLD 302 and 21 credits earned at the 300-level in GRMN; an overall GPA of 3.25; and a GPA of 3.0 in the major course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not

meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for the spring semester admission and no later than July 1 for fall semester admission. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Two reference letters (at least one from a School of World Studies faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the M.S. in Business with a concentration in marketing management program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate School of World Studies adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Foreign Language degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply toward open elective credits for the undergraduate degree. Three of these credits, MKTG 672, are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. Nine credits are foundation courses for the graduate program and apply to the undergraduate degree only.

The graduate business courses that may be taken as an undergraduate once a student is admitted to the program – and how they apply – are shown in the table below.

Course	Title	Hours
ACCT 507	Fundamentals of Accounting (graduate foundation; satisfies open elective in undergraduate program)	3
MKTG 672	Influencing Consumer Behavior (shared between undergraduate and graduate programs)	3
FIRE 520	Financial Concepts of Management (graduate foundation; satisfies open elective in undergraduate program)	3
SCMA 524	Statistical Fundamentals for Business Management (graduate foundation; satisfies open elective in undergraduate program)	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
GRMN 300	Communication and Composition	3
GRMN 307 or GRMN 311	German Conversation and Film German Through the Media	3
Open electives		9
Term Hours:		15
Spring semester (on-campus or study abroad semester)		
GRMN 301	Self and Society: Effective Writing	3
GRMN 321	From Faust to Nazism: Civilization and Literature II	3
GRMN elective (400-level)		3
Open electives		6
Term Hours:		15
Senior year		
Fall semester		
ACCT 507	Fundamentals of Accounting	3
FRLG 493	World Languages Internship (or other experiential learning opportunity)	3
GRMN 322 or GRMN 320	From Kafka's World to the EU: Civilization and Literature III From the Vandals to Kant: Civilization and Literature I	3
SCMA 524	Statistical Fundamentals for Business Management	3
GRMN elective (400-level or higher)		3
World ePass completion		0
Term Hours:		15
Spring semester		
FIRE 520	Financial Concepts of Management	3
MKTG 672	Influencing Consumer Behavior	3
WRLD 490	Seminar in World Cultures and Languages	3
GRMN elective (400-level or higher)		3
Open elective		3
Term Hours:		15
Fifth year		
Fall semester		
MKTG 671	Marketing Management	3
MKTG 675	Digital Marketing	3
MKTG 679	Brand Strategy	3
Electives		6
Term Hours:		15
Spring semester		
MKTG 657	Market Planning Project	3
Electives		9
Term Hours:		12

Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish

worldstudies/languages (<https://worldstudies.vcu.edu/academic-programs/foreign-languages/>)

In today's world, language learning is more important than ever. The ability to navigate across diverse language, ethnic, racial and cultural borders allows connection with others, helping create a more inclusive and mutually respectful society. Additionally, employers the world over value the communication skills, cultural competence and practical experiences language students acquire through course work, internships, service learning and study abroad. Proficiency in a second language offers special practical benefits: VCU graduates with language skills are among the more qualified candidates for jobs in international businesses, nonprofits and government agencies. They also qualify for jobs as language teachers in schools, where they often serve as role models, mentors and leaders.

VCU's B.A. in Foreign Language curriculum allows students to focus on either one or two languages, including the option to combine their major with other disciplines as they work with advisers to plan for their future careers. VCU course work leads majors to explore cultural traditions and historical developments in various parts of the world, and to pursue applied vocabulary and practices that they can use in real-world situations locally, nationally, globally and virtually. Special effort is made to develop intercultural communication competence.

Becoming a language major is one of the best decisions a student can make! Most will find a seamless transition to VCU from high school or community college programs. Placement testing and the transfer of Advanced Placement, IB and other college-level courses from high school or from a community college can shorten time to degree completion and make it easier for students to pursue dual or double majors and build on minors or certificate programs from across VCU.

Student learning outcomes

- Development of oral and aural communication skills in context
- Development of written communication skills
- Development of critical and analytical reading skills
- Development of historical, literary and cultural competency

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete at least 39 credits within the major, 33 credits of which must be upper-level (300-level or above), with a minimum major GPA of 2.25.

All foreign language majors, students transferring credits from study abroad and transfer students who major in a foreign language must include in their target-language course work a minimum of 12 VCU

credits. Both credit and distribution requirements (minimum of 11 courses in target language) for the concentration must be satisfied.

Foreign language majors who plan on becoming language teachers in the K-12 school system are required to complete a total of 30 credits of upper level (300- and 400-level) course work in one target language to meet certification requirements.

Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish

Course	Title	Hours
General education (p. 77)		
Select 12 -13 credits from foundations of learning and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages	3
• Additional major requirements		
SPAN 201	Intermediate Spanish I ¹	3
SPAN 202	Intermediate Spanish II ¹	3
SPAN 300	Communication and Composition	3
SPAN 301	Self and Society: Effective Writing	3
SPAN 320	Civilization of Spain I	3
or SPAN 321	Latin American Civilization I	
SPAN 331	Survey of Latin American Literature	3
or SPAN 330	Survey of Spanish Literature	
Choose one of the following oral communication-based courses:		3
SPAN 305	Oral Communication	
SPAN 307	Spanish Conversation and Film	
SPAN 311	Spanish Through the Media	
Choose six credits of 300-level SPAN electives from the list below, or 400-level SPAN electives.		6
• Major electives		
Select SPAN courses (400 level) from list below. May include up to three credits of FRLG 493, SET1 400, SET1 410 or SET1 420.		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts (course offered by the School of the Arts)		1-3
• Experiential learning		
0-3		
Select one of the following:		
Major-specific service-learning course		
Study abroad program		
Internship (FRLG 493, INTL 493, WRLD 493 or other preapproved internship opportunities)		
Foreign language through the 102 level (by course or placement) ²		0-6
World ePass ³		
Open electives		

Select any course	38-49
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Total Hours	120
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1

Higher level placement score for these 200-level courses determines the starting point of the degree. Students who test above the course level fulfill the surpassed course credits with 300- or 400-level electives.

2

In order to begin upper-level course work in any foreign language, students must have consecutively completed these courses or must prove the equivalent proficiency level through placement testing.

3

Students must complete the School of World Studies World ePass.

The minimum number of credit hours required for this degree is 120.

SPAN electives

Course	Title	Hours
300-level courses		
SPAN 302	Literary Readings and Composition	3
SPAN 320	Civilization of Spain I	3
SPAN 321	Latin American Civilization I	3
SPAN 322	Hispanic Immigrants in the U.S.	3
SPAN 330	Survey of Spanish Literature	3
SPAN 331	Survey of Latin American Literature	3
SPAN 332	Latino Writers in the U.S.	3
400-level courses		
FRLG 493	World Languages Internship	1-3
SETI 400	Spanish-English Comparative Grammar	3
SETI 410	Introduction to Spanish-English Translation	3
SETI 420	Introduction to Spanish-English Interpretation	3
SPAN 402	Language Issues in the Spanish-speaking World	3
SPAN 403	History of the Spanish Language	1-3
SPAN 414	Commercial Spanish	1-3
SPAN 420	Civilization of Spain II	1-3
SPAN 421	Civilization of Latin America II	1-3
SPAN 422	Spanish and Latin American Cinema	1-3
SPAN 430	Literary Genres	1-3
SPAN 431	Literary Periods	1-3
SPAN 432	Hispanic Culture Through Literature	3
SPAN 433	Don Quixote	3
SPAN 485	Spanish Study Abroad	1-12
SPAN 491	Topics in Spanish	1-3
SPAN 492	Independent Study	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
SPAN 101	Beginning Spanish I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select quantitative foundations)		3-4
General education course (select AOI for global perspectives)		3
General education course (select AOI for diversities in the human experience)		3
Term Hours:		15-16

Spring semester

SPAN 102	Beginning Spanish II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Term Hours:		15

Sophomore year

Fall semester		Hours
SPAN 201	Intermediate Spanish I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open electives		6
Term Hours:		15
Spring semester		Hours
HUMS 202	Choices in a Consumer Society	1
SPAN 202	Intermediate Spanish II	3
WRLD 302	Communicating Across Cultures	3
Experiential fine arts (course offered by the School of the Arts)		1-3
Open electives		5-7
Term Hours:		15

Junior year

Fall semester		Hours
SPAN 300	Communication and Composition	3
SPAN 305	Oral Communication	3
or	or Spanish Conversation and Film	
SPAN 307	or Spanish Through the Media	
or		
SPAN 311		

Open electives	9
Term Hours:	15
Spring semester	
On-campus or study abroad semester	
SPAN 301 Self and Society: Effective Writing	3
SPAN 320 Civilization of Spain I or SPAN 321 or Latin American Civilization I	3
SPAN 330 Survey of Spanish Literature or SPAN 331 or Survey of Latin American Literature	3
300-level SPAN elective	3
Open electives	3
Term Hours:	15
Summer semester	
Study abroad (recommended):	
Upper-level SPAN courses that meet concentration, elective or experiential learning requirements (Note that credits completed during study abroad will decrease open electives needed in subsequent semesters.)	0-6
Term Hours:	0-6
Senior year	
Fall semester	
300-level SPAN elective	3
400-level SPAN electives	6
Open electives	6
World ePass completion	0
Term Hours:	15
Spring semester	
FRLG 493 World Languages Internship (or SPAN elective at 400 level or above)	3
WRLD 490 Seminar in World Cultures and Languages (capstone)	3
Open electives	9
Term Hours:	15
Total Hours:	120-127

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.S.

The accelerated B.A. and M.S. program allows qualified students to earn both the B.A. in Foreign Language with a concentration in Spanish and M.S. in Business with a concentration in marketing management in a minimum of five years by completing up to 12 credit hours of approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to three credit hours of graduate courses toward both the B.A. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 147 credits rather than the 150 credits necessary if the two degrees are pursued separately.

In their senior year students would also take up to nine credit hours of graduate-level foundations courses, which are prerequisites for the graduate program.

Students holding these degrees will be very competitive due to the combined knowledge and skills in language, culture and business and will be well prepared for success in an increasingly global marketplace.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including WRLD 302 and 21 credits earned at the 300-level in GRMN; an overall GPA of 3.25; and a GPA of 3.0 in the major course work. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for the spring semester admission and no later than July 1 for fall semester admission. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Two reference letters (at least one from a School of World Studies faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the M.S. in Business with a concentration in marketing management program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate School of World Studies adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Foreign Language degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will apply toward open elective credits for the undergraduate degree. Three of these credits, MKTG 672, are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. Nine credits are foundation courses for the graduate program and apply to the undergraduate degree only.

The graduate business courses that may be taken as an undergraduate once a student is admitted to the program – and how they apply – are shown in the table below.

Course	Title	Hours
ACCT 507	Fundamentals of Accounting (graduate foundation; satisfies open elective in undergraduate program)	3
MKTG 672	Influencing Consumer Behavior (shared between undergraduate and graduate programs)	3

FIRE 520	Financial Concepts of Management (graduate foundation; satisfies open elective in undergraduate program)	3
SCMA 524	Statistical Fundamentals for Business Management (graduate foundation; satisfies open elective in undergraduate program)	3

Electives	6	
Term Hours:	15	
Spring semester		
MKTG 657	Market Planning Project	3
Electives	9	
Term Hours:	12	

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
SPAN 300	Communication and Composition	3
SPAN 305 or SPAN 307 or SPAN 311	Oral Communication Spanish Conversation and Film Spanish Through the Media	3
Open electives		9
Term Hours:		15
Spring semester (on-campus or study abroad semester)		
SPAN 301	Self and Society: Effective Writing	3
SPAN 320 or SPAN 321	Civilization of Spain I Latin American Civilization I	3
SPAN 330 or SPAN 331	Survey of Spanish Literature Survey of Latin American Literature	3
SPAN elective (300-level)		3
Open elective		3
Term Hours:		15
Senior year		
Fall semester		
ACCT 507	Fundamentals of Accounting	3
SCMA 524	Statistical Fundamentals for Business Management	3
SPAN elective (300-level or higher)		3
SPAN electives (400-level or higher)		6
World ePass completion		0
Term Hours:		15
Spring semester		
FIRE 520	Financial Concepts of Management	3
MKTG 672	Influencing Consumer Behavior	3
WRLD 490 or FRLG 493	Seminar in World Cultures and Languages (or SPAN 400-level elective; whichever not) World Languages Internship	3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
MKTG 671	Marketing Management	3
MKTG 675	Digital Marketing	3
MKTG 679	Brand Strategy	3

International Studies, Bachelor of Arts (B.A.) with a concentration in European studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

Student learning outcomes

1. Students will be able to critically analyze culturally specific as well as global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.
4. Students will attain intermediate college-level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign languages such as FREN, GRMN, ITAL, RUSS, SPAN).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second

major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in European studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 210	International Social Justice Studies	3
WRLD 302	Communicating Across Cultures	3
• Additional major requirements		
Foreign language courses (300 level or higher)		6
• Concentration requirements		
Select courses to complete the requirements described in the list below.		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Foreign language through the 202 or 205 level		0-6
World ePass completion		0
Open electives		
Select any course.		32-46
Total Hours		120

1

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Concentration courses

The concentration in European studies requires a total of 18 elective credits of interdisciplinary course work. A maximum of six elective credits within the concentration may be earned within the same discipline (e.g. HIST, SPAN, POLI, RELS, etc.) Courses marked "when appropriate" require preapproval from the School of World Studies Advising Office.

Course	Title	Hours
Select a minimum of three credits from the following:		
HIST 101 or HIST 102	Survey of European History	3
HIST 310	The Early Middle Ages	
HIST 311	High and Later Middle Ages	
HIST 312	Europe in the Early Modern Period, 1350-1650	
HIST 313	Europe in Absolutism and Enlightenment, 1648-1815	
HIST 314	The Zenith of European Power, 1815-1914	
HIST 315	The Age of Total War in Europe, 1914-1945	
HIST 316	Postwar Europe, 1945 to the Present	
HIST 317	History of France I	
HIST 318	History of France II	
HIST 319	History of Germany I	
HIST 320	History of Germany II	
HIST 321	The Holocaust	
HIST 322	Nazi Germany	
HIST 324	History of Early Modern Britain	
HIST 325	History of Modern Britain	
HIST 326	The British Empire	
HIST 327	History of Russia I	
HIST 328	History of Russia II	
HIST 329	History of Spain and Portugal	
HIST 330/ GSWS 339	History of Gender and Sexuality in Europe I	
HIST 331/ GSWS 340	History of Gender and Sexuality in Europe II	
HIST 391	Topics in History (when appropriate)	
HIST 404	Studies in Modern European History: _____	
Select a minimum of three credits from the following:		
ANTH/INTL 455	Anthropology of Development and Globalization (when appropriate)	3
FRLG/INTL 345/ URSP 350	Great Cities of the World (when appropriate)	
INTL 491	Topics in International Studies (when appropriate)	
INTL 492	Independent Study (when appropriate)	
MGMT/INTL 419	Doing Business in Europe	
POLI/INTL 352	European Governments and Politics	
POLI 354/354	Russian and Post-Soviet Politics	

POLI 362/362	International Organizations and Institutions	
POLI/INTL 365	International Political Economy	
URSP/INTL 334	Regional Geography of ____ (when appropriate)	
Select a minimum of three credits from the following:		3
FLET 391	Topics in Foreign Literature in English Translation (when appropriate)	
FREN 320	French Civilization and Culture I	
FREN 321	French Civilization and Culture II	
FREN 420	French Regional Culture	
FREN 421	French Contemporary Culture	
FREN 425	French Media	
FREN 450	Francophone Literatures and Cultures	
GRMN 320	From the Vandals to Kant: Civilization and Literature I	
GRMN 321	From Faust to Nazism: Civilization and Literature II	
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	
GRMN 420	The Turn of the Century	
GRMN 423	Folk/Popular Culture	
GRMN 424	Culture and Society	
ITAL 320	Italian Cinema: ____	
ITAL 330	Themes in Italian Literature: ____	
ITAL 391	Topics in Italian	
RELS 310	Mediterranean Religions	
RUSS 311	Conversation and Media	
RUSS 330	Literature and Culture: ____	
RUSS 422	Russian Film	
RUSS 491	Topics in Russian	
SPAN 320	Civilization of Spain I	
SPAN 330	Survey of Spanish Literature	
SPAN 420	Civilization of Spain II	
SPAN 433	Don Quixote	
WRLD 391	Topics in World Languages and Cultures (taught on campus, and when appropriate)	
WRLD 422	National Cinema (when appropriate)	
WRLD 491	Topics in World Languages and Cultures (when appropriate)	
Students may also choose three credits from the following art history courses to complete concentration requirements:		0-3
ARTH 305	Classical Art and Architecture	
ARTH 310	Medieval Art and Architecture	
ARTH 315	Renaissance Art and Architecture	
ARTH 320	Baroque and Rococo Art and Architecture	
ARTH 324	18th-century Art in Europe	
ARTH 325	19th-century Art in Europe	
ARTH 367	German Expressionism	

To complete the remaining credits for the concentration, students choose additional courses from the above categories.

Total Hours 18

Courses taken through an accredited study abroad program must be preapproved through the SWS Advising Office.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
WRLD 210	International Social Justice Studies	3
Foreign language 101 (FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select quantitative foundations)		3-4
Term Hours:		13-14

Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
Concentration course (HIST 101 or HIST 102 recommended)		3
Foreign language 102 (FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select AOI for global perspectives)		3
Open elective		3
Term Hours:		16

Sophomore year

Fall semester		Hours
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Concentration course		3
Foreign language 201 (FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select AOI for diversities in the human experience)		3
Open elective		3
Term Hours:		15

Spring semester

Concentration course		3
Experiential fine arts		1-3
Foreign language 202 (FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3

General education course (select AOI for scientific and logical reasoning)	3
Open elective	3
Term Hours:	16-18

Junior year**Fall semester**

INTL 375 Interdisciplinary Methods for International Studies Research	3
RELS 340/ INTL 341 Global Ethics and the World's Religions	3
Foreign language (FREN, GRMN, ITAL, RUSS, SPAN; 300 level or higher)	3
General education course (select BOK to complete breadth of knowledge requirement)	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:	15

Spring semester

On-campus or study abroad semester

WRLD 302 Communicating Across Cultures (if not taking WRLD 391 during study abroad; may also choose open elective)	3
Concentration course	3
Foreign language (FREN, GRMN, ITAL, RUSS, SPAN; 300 level or higher)	3
Open electives	6
Term Hours:	15

Summer semester

Optional study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters:

In consultation with an academic adviser, 0-6 credits in INTL, a foreign language relevant to concentration or degree electives	0-6
Term Hours:	0-6

Senior year**Fall semester**

INTL 465 Rethinking Globalization	3
Concentration course	3
Experiential learning requirement (if not already satisfied)	0-3
Foreign language course 300-level (if pursuing minor in FREN, GRMN, ITAL, RUSS or SPAN) or open elective	3
Open electives	6
World ePass completion by graduation check-out date	
Term Hours:	15-18

Spring semester

INTL 490 Senior Capstone in International Studies	3
Concentration or open elective course	3
Foreign language course 300-level (if pursuing minor in FREN, GRMN, ITAL, RUSS or SPAN) or open elective	3
Open electives	6
Term Hours:	15

Total Hours: 120-132**The minimum number of credit hours required for this degree is 120.**

International Studies, Bachelor of Arts (B.A.) with a concentration in general studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

Student learning outcomes

1. Students will be able to critically analyze culturally specific as well as global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.
4. Students will attain intermediate college-level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of

foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in general studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 210	International Social Justice Studies	3
WRLD 302	Communicating Across Cultures	3
• Additional major requirements		
Foreign language courses (300 level or higher)		6
• Concentration requirements		
Select courses to complete the requirements as described below. ¹		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Foreign language through the 202 or 205 level		0-6
World ePass completion		0
Open electives		
Select any course.		32-46
Total Hours		120

1

Students pursuing the general studies concentration in international studies are required to complete the core requirements (18 credits) and, in consultation with a School of World Studies adviser, to design a cohesive interdisciplinary academic plan compatible with the program's specified learning outcomes to complete the remaining/additional required 18 credits of course work.

2

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
WRLD 210 International Social Justice Studies	3
Foreign language 101	3
General education course (select quantitative foundations)	3-4
Term Hours: 13-14	

Spring semester	Hours
HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
Foreign language 102	3
General education course (select AOI for global perspectives)	3
General education course (select AOI for diversities in the human experience)	3
Open elective	3
Term Hours: 16	

Sophomore year

Fall semester	Hours
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
WRLD 302 Communicating Across Cultures	3
Foreign language 201	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
General education course (select AOI for scientific and logical reasoning)	3
Term Hours: 15	

Spring semester	Hours
RELS 340/INTL 341 Global Ethics and the World's Religions	3
INTL general curriculum course (based on proposal) ¹	3
Experiential fine arts	1-3
Foreign language 202	3
General education course (select BOK to complete breadth of knowledge requirement)	3

Minor elective	3
Term Hours:	16-18

Junior year**Fall semester**

INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL general curriculum course (based on proposal) ¹		3
Foreign language (300, 305, 320 or 321)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Minor elective		3
Term Hours:		15

Spring semester

INTL general curriculum courses (based on proposal) ¹		6
Minor electives		6
Open elective or INTL 375		3
Term Hours:		15

Summer semester

Optional study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters:

In consultation with an academic adviser, 0-6 credits in INTL, a foreign language relevant to concentration or degree electives	0-6
Term Hours:	0-6

Senior year**Fall semester**

INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies (or open INTL elective)	3
INTL 493	International Studies Internship (or other course fulfilling experiential learning or open INTL elective)	3
Minor electives		6
World ePass completion		
Term Hours:		15

Spring semester

INTL 493 or INTL 490	International Studies Internship (or other course fulfilling experiential learning or open elective) or Senior Capstone in International Studies	3
INTL general curriculum courses (based on proposal) ¹		6
Open electives		6
Term Hours:		15

Term Hours: **120-129**

1

To complete the major credit requirements in international studies, students propose course work comprising a coherent set of courses deepening their knowledge in a particular area. Students must formulate and seek pre-approval of their course plan through the SWS Advising

Office. A minimum of 21 credits within the major must be earned through upper-level course work (300- and 400-level).

The minimum number of credit hours required for this degree is 120.

International Studies, Bachelor of Arts (B.A.) with a concentration in international social justice studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

Student learning outcomes

1. Students will be able to critically analyze culturally specific as well as global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.
4. Students will attain intermediate college-level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in international social justice studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 210	International Social Justice Studies	3
WRLD 302	Communicating Across Cultures	3
• Additional major requirements		
Foreign language courses (300 level or higher)		6
• Concentration requirements		
Select courses to complete the requirements described in the list below.		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Foreign language through the 202 or 205 level		0-6
World ePass completion		0
Open electives		
Select any course.		32-46
Total Hours		120

1

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Concentration courses

The concentration in international social justice studies requires a total of 18 elective credits of interdisciplinary course work. A maximum of six elective credits within the concentration may be taken from within the same discipline to fulfill these requirements.

Course	Title	Hours
Required course		
WRLD 220	Human Rights and Literature	3
Select at least six credits from the following:		6
RELS 450/ INTL 449	Religion, Globalization and Social Justice	
RELS/INTL/AFAM 451	Religion, Racism and Social Justice	
RELS/INTL/GSWs 453	Western Religions, Women and Social Justice	
RELS 455/ INTL 456	Catholic Ethics and Social Justice	
Select nine credits from at least three of the following categories:		9
History, gender, and race:		
AFAM/GSWs/ SOCY 305	African American Family in Social Context	
ANTH 200	Introduction to African Societies	
ANTH/AFAM/INTL 420	Women of Africa	
GSWS 301	Feminist Theory	
GSWS 309	Gender and Global Health	
HIST 354	History of Native Americans in the South	
HIST 355	Native Americans in Modern America	
HIST 365/ GSWS 341	History of Gender and Sexuality in America I	
HIST 380/ AFAM 390/GSWs 390	Forced and Coerced Labor in Africa and the Americas	
HIST 416	Studies in the History of Women, Gender and Sexuality: ____	
POLI/AFAM 318	Politics of Race, Class and Gender	
POLI/GSWs 366/ INTL 368	Women and Global Politics	
Literature:		
ENGL/AFAM 363/ INTL 366	African Literature	
ENGL/AFAM 365/ INTL 367	Caribbean Literature	
ENGL 381	Multiethnic Literature	
FREN/INTL 450	Francophone Literatures and Cultures	
GRMN 421	The Postwar German Scene	
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN 332	Latino Writers in the U.S.	
Politics and globalization:		
ANTH/INTL 349	Rethinking a Continent: Latin America	
ANTH/INTL 350	Rethinking a Continent: Europe	

ANTH/INTL 455	Anthropology of Development and Globalization	
MASC/WRLD 359	International Media Coverage: The Middle East	
POLI/AFAM 302	Politics of the Civil Rights Movement	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
POLI/INTL 365	International Political Economy	
POLI/GSWS 366/ INTL 368	Women and Global Politics	
Topics (when appropriate): ¹		
ANTH 391	Topics in Anthropology	
FLET 391	Topics in Foreign Literature in English Translation	
FREN 491	Topics in French (for example, «Cinéma du monde arabe»)	
GRMN 491	Topics in German	
RELS 391	Topics in Religious Studies	
RELS 491	Topics in Religious Studies	
RUSS 491	Topics in Russian	
SPAN 491	Topics in Spanish	
WRLD 391	Topics in World Languages and Cultures (taught on campus)	
WRLD 491	Topics in World Languages and Cultures	
World cinema:		
ANTH 331	Public Culture: Anthropology Through Film	
FREN 422	French Cinema	
GRMN 422	German Film	
ITAL 320	Italian Cinema: _____	
RELS 422	Religion and Film	
RUSS 422	Russian Film	
SPAN 422	Spanish and Latin American Cinema	
WRLD 422	National Cinema	
Total Hours		18

¹
Students must receive approval through the SWS Advising Office for topics courses counting toward the concentration.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3
WRLD 210	International Social Justice Studies	3

Foreign language 101 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select quantitative foundations)	3-4

Term Hours: 13-14

Spring semester		
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) video for Focused Inquiry II	3

Foreign language 102 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select AOI for global perspectives)	3
Open electives	6

Term Hours: 16

Sophomore year
Fall semester

RELS 340/ INTL 341 or WRLD 302	Global Ethics and the World's Religions or Communicating Across Cultures	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
WRLD 220	Human Rights and Literature	3
Foreign language 201 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3	
General education course (select AOI for diversities in the human experience)	3	

Term Hours: 15

Spring semester		
Concentration course		3
Experiential fine arts		1-3
Foreign language 202 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Open elective		3

Term Hours: 16-18

Junior year
Fall semester

INTL 375	Interdisciplinary Methods for International Studies Research	3
Foreign language 300-level or higher (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3

Open elective		3
Term Hours:		15
Spring semester		
On-campus or study abroad semester:		
WRLD 302	Communicating Across Cultures (or	3
or RELS	concentration elective)	
340/	or Global Ethics and the World's	
INTL 341	Religions	
RELS 450/	Religion, Globalization and Social Justice	3
INTL 449	or Religion, Racism and Social Justice	
or RELS/	or Western Religions, Women and Social	
INTL/	Justice	
AFAM 451	or Catholic Ethics and Social Justice	
or RELS/		
INTL/		
GSWS 453		
or RELS		
455/		
INTL 456		
Concentration course		3
Foreign language 300-level or higher (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)		3
Open elective		3
Term Hours:		15
Summer semester		
Optional study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters:		
In consultation with an academic adviser, 0-6 credits in INTL, foreign language relevant to concentration or degree electives		0-6
Term Hours:		0-6
Senior year		
Fall semester		
INTL 465	Rethinking Globalization	3
INTL 493	International Studies Internship (or other experiential learning requirement (if not already satisfied))	3
or		
INTL 490	or Senior Capstone in International Studies	
RELS 450/	Religion, Globalization and Social Justice	3
INTL 449	or Religion, Racism and Social Justice	
or RELS/	or Western Religions, Women and Social	
INTL/	Justice	
AFAM 451	or Catholic Ethics and Social Justice	
or RELS/		
INTL/		
GSWS 453		
or RELS		
455/		
INTL 456		
Foreign language course 300-level or higher (if pursuing minor) or open elective		3
Open elective		3
World ePass completion		
Term Hours:		15
Spring semester		

INTL 490	Senior Capstone in International Studies (if	3
or	not taken in fall)	
INTL 493	or International Studies Internship	
Concentration course		3
Foreign language course 300-level or higher (if pursuing minor) or open elective		3
Open electives		6
Term Hours:		15
Total Hours:		120-129

The minimum number of credit hours required for this degree is 120.

International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

Student learning outcomes

1. Students will be able to critically analyze culturally specific as well as global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.
4. Students will attain intermediate college-level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses

completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 210	International Social Justice Studies	3
WRLD 302	Communicating Across Cultures	3
• Additional major requirements		
Foreign language courses (300 level or higher)		6
• Concentration requirements		
Select courses to complete the requirements described in the list below.		18
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-6
Foreign language through the 202 or 205 level		0-6
World ePass completion		0

Open electives

Select any course.	32-46
Total Hours	120

1

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Concentration courses

The concentration in Latin American studies requires a total of 18 credits of interdisciplinary course work. A maximum of six credits within the concentration may be taken from the same discipline to fulfill these requirements.

Course	Title	Hours
Select a minimum of three credits from the following:		
HIST 109	Survey of Latin American History	3
HIST 110	Survey of Latin American History	
HIST 370	History of Central America	
HIST 373	History of the Andes to 1800	
HIST 374	History of the Andes From 1800	
HIST 376	Caribbean History to 1838	
HIST 377	Caribbean History Since 1838	
Select a minimum of six credits from the following:		
ANTH 348	South American Ethnography	6
ANTH 349	Rethinking a Continent: Latin America	
ANTH 391	Topics in Anthropology (when appropriate, e.g. Postcolonial Processes, Ethnographic Film)	
FLET 391	Topics in Foreign Literature in English Translation (when appropriate)	
POLI 353	Latin American Governments and Politics	
RELS 336	Religions in Latin America	
RELS 391	Topics in Religious Studies (when appropriate)	
RELS 491	Topics in Religious Studies (when appropriate)	
URSP 331	Geography of Latin America and the Caribbean	
Select a minimum of three credits from the following:		
SPAN 321	Latin American Civilization I	3
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN 331	Survey of Latin American Literature	
SPAN 332	Latino Writers in the U.S.	
SPAN 421	Civilization of Latin America II	
SPAN 422	Spanish and Latin American Cinema	
SPAN 430	Literary Genres (when appropriate)	
SPAN 491	Topics in Spanish (when appropriate, e.g., Gabriel Garcia Marquez or Hispanic Culture through Poetry)	
Select six credits from courses listed above or from the following:		
ARTH 335	Pre-Columbian Art and Architecture	6

ARTH 338	Colonial Art and Architecture of Latin America
ARTH 339	Modern and Contemporary Art and Architecture of Latin America
HIST 354	History of Native Americans in the South
HIST 371	History of Mexico
HIST 372	History of Brazil
INTL 491	Topics in International Studies (when appropriate)
POLI 391	Topics in Political Science (when appropriate)
POLI 491	Topics in Political Science (when appropriate)
WRLD 391	Topics in World Languages and Cultures (when appropriate)

Total Hours 18

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
WRLD 210	International Social Justice Studies	3
Foreign language 101	(Spanish or Portuguese)	3
General education course	(select quantitative foundations)	3-4
Term Hours:		13-14

Spring semester

HIST 109	Survey of Latin American History or Survey of Latin American History	3
HIST 110	or History of Central America	
HIST 370	or History of the Andes to 1800	
HIST 373	or History of the Andes From 1800 or Caribbean History to 1838	
HIST 374	or Caribbean History Since 1838	
HIST 376	or	
HIST 377	or	
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Foreign language 102	(Spanish or Portuguese)	3
General education course	(select AOI for global perspectives)	3

Open elective	3
Term Hours:	16

Sophomore year

Fall semester

RELS 340/INTL 341	Global Ethics and the World's Religions	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 201	(Spanish or Portuguese)	3
General education course	(select AOI for diversities in the human experience)	3
Open elective		3
Term Hours:		15

Spring semester

WRLD 302	Communicating Across Cultures	3
Experiential fine arts		1-3
Foreign language 202	(Spanish or Portuguese)	3
General education course	(select AOI for creativity, innovation and aesthetic inquiry)	3
General education course	(select AOI for scientific and logical reasoning)	3
Open elective		3
Term Hours:		16-18

Junior year

Fall semester

INTL 375	Interdisciplinary Methods for International Studies Research	3
Concentration course		3
Foreign language 300-level or higher	(Spanish or Portuguese)	3
General education course	(select BOK to complete breadth of knowledge requirement)	3
General education course	(select BOK to complete breadth of knowledge requirement)	3
Term Hours:		15

Spring semester

On-campus or study abroad semester:		
Concentration courses		6
Foreign language 300-level or higher	(Spanish or Portuguese)	3
Open electives		6
Term Hours:		15

Summer semester

Study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters:		
In consultation with an academic adviser, 0-6 credits in INTL, foreign language relevant to concentration or degree electives		0-6
Term Hours:		0-6

Senior year

Fall semester

INTL 465	Rethinking Globalization	3
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SPAN 300-level (if pursuing Spanish minor) or open elective	3
Concentration course	3
Experiential learning requirement (if not already satisfied)	0-3
Open electives	6
World ePass completion	
Term Hours:	15-18
Spring semester	
INTL 490 Senior Capstone in International Studies	3
SPAN 300-level (if pursuing Spanish minor) or open elective	3
Concentration course	3
Open electives	6
Term Hours:	15
Total Hours:	120-132

The minimum number of credit hours required for this degree is 120.

International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students’ knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students’ comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual’s course of study, which can be organized in a manner that best suits a student’s particular needs.

Student learning outcomes

1. Students will be able to critically analyze culturally specific as well as global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.
4. Students will attain intermediate college-level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 37 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INTL 375	Interdisciplinary Methods for International Studies Research	3
INTL 465	Rethinking Globalization	3
INTL 490	Senior Capstone in International Studies	3
RELS 340/INTL 341	Global Ethics and the World’s Religions	3
WRLD 210	International Social Justice Studies	3
WRLD 302	Communicating Across Cultures	3
• Additional major requirements		
Foreign language courses (300 level or higher) ¹		6
• Concentration requirements		
WRLD 330	Introduction to Film Studies	3
WRLD 422	National Cinema	1-3

WRLD 430 or WRLD 535	Film and the City World Filmmakers	3
Select elective courses to complete the requirements from the list below.		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
WRLD 230	Introduction to World Cinema	3
Experiential fine arts ²		1-3
Foreign language through the 102 level (by course or placement)		0-6
Foreign language through the 202 or 205 level		0-6
World ePass completion		0
Open electives		
Select any course.		32-48
Total Hours		120

1

Students are encouraged to fulfill the upper-level foreign language requirement by choosing film-related course work from FREN 307, GRMN 307, ITAL 320 and SPAN 307. Those who meet the prerequisites for taking a 400-level course in foreign language may also consider taking a course from FREN 422, GRMN 422, RUSS 422 and SPAN 422.

2

Courses offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.

Concentration electives

Course	Title	Hours
Select six credits from the following:		
ANTH 331	Public Culture: Anthropology Through Film	3
ARTH 270 or ARTH 271	History of the Motion Picture I History of the Motion Picture II	3
ENGL 385	Fiction into Film	3
RELS 422	Religion and Film	3
INTL 493 or FRLG 493 or WRLD 493	International Studies Internship (select only one) World Languages Internship World Cultures Internship	1-3
WRLD 422	National Cinema (course may be repeated with different themes)	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3

WRLD 210 International Social Justice Studies	3
Experiential fine arts	1-3
Foreign language 101 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select quantitative foundations)	3-4
Term Hours:	14-17

Spring semester

HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) video for Focused Inquiry II	3
Foreign language 102 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select AOI for global perspectives)	3
General education course (select AOI for diversities in the human experience)	3
Open elective	3
Term Hours:	16

Sophomore year

Fall semester

UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
WRLD 230 Introduction to World Cinema	3
Foreign language 201 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)	3
Open elective	3
Term Hours:	15

Spring semester

WRLD 330 Introduction to Film Studies	3
Concentration course (ARTH 270 or ARTH 271 History of the Motion Picture recommended)	3
Foreign language 202 (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select AOI for scientific and logical reasoning)	3
General education course (select BOK to complete breadth of knowledge requirement)	3
Term Hours:	15

Junior year

Fall semester

INTL 375 Interdisciplinary Methods for International Studies Research	3
RELS 340 Global Ethics and the World's Religions or INTL 341 Global Ethics and the World's Religions	3
WRLD 430 Film and the City or WRLD 535 World Filmmakers	3

Foreign language 300-level or higher (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
General education course (select BOK to complete breadth of knowledge requirement)	3

Term Hours: 15

Spring semester

On-campus or study abroad semester:

WRLD 302 Communicating Across Cultures	3
WRLD 422 National Cinema	3
Concentration course	3
Foreign language 300-level or higher (ARBC, CHIN, FREN, GRMN, ITAL, RUSS, SPAN)	3
Open elective	3

Term Hours: 15

Summer semester

Optional study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters:

In consultation with an academic adviser, 0-6 credits in INTL, foreign language relevant to concentration or degree electives	0-6
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Term Hours: 0-6

Senior year

Fall semester

INTL 465 Rethinking Globalization	3
Experiential learning requirement (if not already satisfied)	0-3
Foreign language course 300-level (if pursuing minor in FREN, GRMN, ITAL, RUSS or SPAN) or open elective	3
Open electives	9
World ePass completion	

Term Hours: 15-18

Spring semester

INTL 490 Senior Capstone in International Studies	3
Foreign language course 300-level (if pursuing minor in FREN, GRMN, ITAL, RUSS or SPAN) or open elective	3
Open electives	9

Term Hours: 15

Total Hours: 120-132

The minimum number of credit hours required for this degree is 120.

Religious Studies, Bachelor of Arts (B.A.)

worldstudies.vcu.edu/academics/relstudies (<http://worldstudies.vcu.edu/academics/religious-studies/>)

The mission of the Religious Studies Program at VCU is to advance understanding of the nature, history and diversity of religious traditions.

Religious studies is guided by the idea that studying humanity's diverse and developing religious traditions is vital to understanding what it means to be human and how to live wisely as members of the world community. Students explore the artistic, ethical, literary, psychological and social dimensions of religions, as well as the relationship between religious ideas, institutions, and practices and matters of gender, sexuality, race, nationality, health, social justice, human rights and nature.

Religious studies emphasizes excellence in written, oral and visual interpretation and communication, critical thinking, informed dialogue, and global citizenship. Combining classroom- and community-based learning through study-abroad programs, internships and community service, religious studies empowers students to engage intellectually and practically with diverse communities and work to build a peaceful, generous and affirming society.

Student learning outcomes

1. Demonstrate knowledge of diverse religious traditions
2. Utilize the vocabulary, concepts and research methods of the academic study of religion
3. Analyze the influence of religions on ethics, society and culture
4. Make clear, well-organized and substantive written and oral presentations

Experiential learning and study abroad

Each student completing a degree program within the School of World Studies is required to complete a World ePass as part of their experiential learning requirement; students are also encouraged to participate in a study abroad program. For more information on the ePass portfolio and study abroad opportunities, students may visit the overview page for the School of World Studies (p. 339).

Special requirements

The Bachelor of Arts in Religious Studies requires a minimum of 120 credits, with at least 30 credits in religious studies courses or in courses listed as acceptable for religious studies credit. Up to six of the 30 credits may be taken in language studies relevant to one's area of research interest and with the appropriate approval through the School of World Studies Advising Office. Other courses occasionally may be substituted should the needs and background of an individual student warrant substitutions. Religious studies majors are encouraged to consider a second major or minor that complements their study of religions (e.g. English, international studies), as well as study-abroad opportunities to enrich their studies.

Degree requirements Religious Studies, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
RELS/INTL 311	Religions of the World	3
RELS/INTL 312	Religions of the World	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
RELS 490	Senior Capstone Seminar	3
• Major electives		
RELS electives: Select an additional four courses from the list below, with at least six credits at the 400 level.		12
Select two religion, society and culture electives from the list below.		6
Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1

RELS 108	Human Spirituality (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3
• Experiential fine arts ¹		1-3
• Experiential learning		0-3
Select one of the following:		
Major-specific service-learning course		
Study abroad program		
Internship (FRLG 493, INTL 493, RELS 493, WRLD 493 or other preapproved internship opportunities)		
• Foreign language through the 102 level (by course or placement)		0-6
• World ePass completion		0
Open electives		
Select any course.		47-58
Total Hours		120

1

Course offered by the School of the Arts

The minimum number of credit hours required for this degree is 120.**Electives**

Course	Title	Hours
Religion, society and culture		
RELS 250	Death: Myth and Reality	3
RELS 310	Mediterranean Religions	3
RELS/PSYC 333	Psychology and Religious Experience	3
RELS 334	Religion in Contemporary America	3
RELS 336	Religions in Latin America	3
RELS 337	Contemporary Cults and New Religious Movements	3
RELS/SOCY 360	Sociology of Religion	3
RELS 361	The Bible as Literature	3
RELS/GSWS 371	Women in Islam	3
RELS/GSWS/INTL 372	Global Women's Spirituality	3
RELS 414	Incarceration and Spirituality: _____	3
RELS 422	Religion and Film	3
RELS 450/INTL 449	Religion, Globalization and Social Justice	3
RELS/AFAM/INTL 451	Religion, Racism and Social Justice	3
RELS/GSWS/INTL 453	Western Religions, Women and Social Justice	3
RELS 455/INTL 456	Catholic Ethics and Social Justice	3
RELS electives		
RELS 101	Introduction to Religious Studies	3
RELS 201	Biblical Hebrew	3
RELS 202	Biblical Hebrew	3
RELS 282	Introduction to Buddhism	3
RELS 280	Introduction to Catholic Studies	3
RELS 291	Topics in Religious Studies	1-3

RELS 301	Introduction to the Hebrew Bible	3
RELS 302	Introduction to the New Testament	3
RELS 303	Intertestamental Literature and Thought	3
RELS 305	Hebrew Prophets	3
RELS 306	Introduction to Judaism	3
RELS/AFAM/INTL 307	Black Religion	3
RELS 313	Life and Literature of Paul	3
RELS 314	Jesus in the New Testament	3
RELS 315/HIST 301	The Ancient Near East	3
RELS/INTL 317	Islam	3
RELS 318/HIST 333	History of the Jewish People I	3
RELS 319/HIST 334	History of the Jewish People II	3
RELS 320	Taoism	3
RELS/PHIL 322	Tibetan Buddhism	3
RELS/PHIL 326	Existentialism	3
RELS 327/HIST 335	History of Christianity I	3
RELS 335	The American Jewish Experience	3
RELS 350/INTL 360	World Classics of Spirituality	3
RELS 362	Shakespeare and Religion	3
RELS 363	Archaeology and Sacred Texts	3
RELS/GSWS 373	Gender and the Bible	3
RELS 380	Global Catholic Thought	3
RELS 391	Topics in Religious Studies	3
RELS/LFSC 401	Faith and Life Sciences	3
RELS 407	Modern Jewish Thought	3
RELS/PHIL 408	Indian Tradition	3
RELS/INTL 409	Modern Islamic Thought and Global Trends	3
RELS/PHIL/INTL 410	The Chinese Tradition in Philosophy	3
RELS/PHIL/INTL 412	Zen Buddhism	3
RELS/ANTH/INTL 425	Religion, Magic and Witchcraft	3
RELS/PHIL 430	Philosophy of Religion	3
RELS/PHIL 440	Mysticism	3
RELS/INTL 441	Islamic Mysticism: the Sufis	3
RELS 442	Seminar in Hinduism	3
RELS 491	Topics in Religious Studies	3
RELS 492	Independent Study	1-3
RELS 493	Religious Studies Internship	1-3
HIST 311	High and Later Middle Ages	3
HIST 335/RELS 327	History of Christianity I	3
HIST 336	History of Christianity II	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
RELS 108 Human Spirituality (satisfies general education BOK for humanities/fine arts and AOI for diversities in the human experience)	3

UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Experiential fine arts		1-3
Foreign language 101		3
General education course (select quantitative foundations)		3-4
Term Hours:		14-17

Spring semester

HUMS 202	Choices in a Consumer Society	1
RELS 311	Religions of the World	3
or	or Religions of the World	
RELS 312		
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Foreign language 102		3
General education course (select AOI for global perspectives)		3
Open elective		3
Term Hours:		16

Sophomore year**Fall semester**

RELS 311	Religions of the World	3
or	or Religions of the World	
RELS 312		
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select AOI for creativity, innovation and aesthetic inquiry)		3
General education course (select AOI for scientific and logical reasoning)		3
Open elective		3
Term Hours:		15

Spring semester

RELS 340	Global Ethics and the World's Religions	3
General education course (select BOK to complete breadth of knowledge requirement)		3
General education course (select BOK to complete breadth of knowledge requirement)		3
Open elective		3
Religion, society and culture elective		3
Term Hours:		15

Junior year**Fall semester**

RELS elective		3
Open electives		9
Religion, society and culture elective		3
Term Hours:		15

Spring semester

On-campus or study abroad semester		
RELS elective		3
Open electives		12
Term Hours:		15

Summer semester

Study abroad (recommended); credits completed during study abroad will decrease open electives needed in subsequent semesters		0-6
Term Hours:		0-6

Senior year**Fall semester**

RELS 493	Religious Studies Internship (or other experiential learning opportunity if not already met)	1-3
or	or Senior Capstone Seminar	
RELS 490		
RELS elective (400-level)		3
Open electives		11-12
World ePass completion		
Term Hours:		15-18

Spring semester

RELS 490	Senior Capstone Seminar (if not taken in the fall)	3
or	or Religious Studies Internship	
RELS 493		
RELS elective (400-level)		3
Open electives		9
Term Hours:		15

Total Hours: **120-132**

The minimum number of credit hours required for this degree is 120.

Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate)

The certificate program prepares advanced Spanish students for further study, national certification exams and/or future employment in these growing fields. The program combines theoretical and applied course work with applied practice in the community, allowing students to hone their skills in a specialization of their choice or to apply for the certificate in general translation and interpretation. Students with advanced-level Spanish and English skills who are concentrating in liberal arts or professional programs as well as other majors are encouraged to apply.

Admission to the certificate program requires completion of SETI 400 with a minimum grade of B or a score of "advanced" on the Avant STAMP assessment test.

Students may earn this certificate concurrently with a baccalaureate degree in another undergraduate program at the university, or may earn the certificate independently from another degree, provided they have a baccalaureate degree from any institution. The six-course sequence focuses on the knowledge and skills needed for translation and interpretation in any field, including translation theory and praxis, research methods, computer-assisted translation tools, industry standards, simultaneous interpretation, consecutive interpretation, and sight translation. Students in specialized interpretation courses

(legal and medical) receive further instruction in terminology related to their areas of interest. The internship requires 120 clock hours of work including translation and/or interpretation practice.

This certificate program requires 18 credits as shown below and successful completion of a comprehensive exit assessment.

Course	Title	Hours
SETI 410	Introduction to Spanish-English Translation (Pre-requisites)	3
SETI 411	Intermediate Translation	3
SETI 420	Introduction to Spanish-English Interpretation	3
SETI 421 or SETI 491	Intermediate Interpretation Topics in Spanish-English Translation and Interpretation	3
SETI 422 or SETI 423	Legal Interpretation Medical Interpretation	3
SETI 493	SETI Internship	3
Total Hours		18

The minimum number of credit hours required for this certificate is 18.

For more information, contact the School of World Studies Advising Office at (804) 827-1111.

African studies, minor in

The African studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Note: Language Placement Test results cannot substitute for completion of course work.

Course	Title	Hours
Select a minimum of three credits of geographically pertinent foreign language course work at the advanced level (300 or above) ¹		3
Select 15 credits from the following:		15
ANTH 391	Topics in Anthropology ²	
ARTH 350/ AFAM 413		
FREN 421	French Contemporary Culture ²	
HIST/AFAM 105	Survey of African History	
HIST/AFAM 106	Survey of African History	
INTL/AFAM/ANTH 200	Introduction to African Societies	
INTL/FLET 391		
INTL/AFAM/ANTH 420	Women of Africa	
INTL/FREN 450	Francophone Literatures and Cultures	
INTL 591	Topics in International Studies ²	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
WRLD/INTL 203	Cultural Texts and Contexts: ____ ²	

WRLD 220	Human Rights and Literature ²
WRLD 391	Topics in World Languages and Cultures ²
WRLD 491	Topics in World Languages and Cultures ²

Total Hours **18**

¹

If this level of instruction is not available in a chosen language at the university, the School of World Studies Advising Office will assist students in identifying appropriate language study options at other U.S. institutions or abroad. Geographically pertinent foreign languages not taught at VCU will be considered on a case-by-case basis.

²

When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an accredited study abroad program in an appropriate location (must be preapproved through the SWS Advising Office)

Anthropology, minor in

An anthropology minor shall consist of 18 credits in anthropology (with at least six of these credits taken in the anthropology program at VCU), including:

Course	Title	Hours
ANTH 103	Introduction to Anthropology	3
Select two of the following:		6
ANTH 105	Introduction to Archaeology	
ANTH 210	Biological Anthropology	
ANTH 220	Cultural Anthropology	
ANTH 230	Anthropological Linguistics	
Select nine additional upper-level ANTH credits (300-, 400- or 500-level)		9
Total Hours		18

Asian and Chinese studies, minor in

The Asian and Chinese studies minor consists of 21 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level.

Native speakers of Chinese may not use intermediate credit in the language to count toward the minor.

Note: Language Placement Test results cannot substitute for completion of course work.

Course	Title	Hours
Select a minimum of three credits of Chinese at the advanced level (300 or above)		3
RELS 311	Religions of the World	3
Select 15 credits from the following (no more than six credits can be earned within the same discipline):		15
CHIN 202	Intermediate Chinese ¹	
Select a minimum of three credits from the following:		
HIST 107	Survey of East Asian Civilizations	

HIST 108	Survey of East Asian Civilizations
HIST 201	The Art of Historical Detection: ____ ²
HIST 379	The History of Modern Japan
HIST 386	History of Late Imperial China, 900-1800
HIST 387	The History of Modern China, 1800 to the Present
HIST 389	History in Film: ____ ²
HIST 391	Topics in History ²
POLI/INTL 355	Asian Governments and Politics
POLI 359/ INTL 452	The Politics of Developing Areas
POLI/INTL 364	Vietnam
Select a minimum of three credits from the following:	
ARTH 245	Survey of Asian Art
ARTH 449	Studies in Asian Art
FLET/INTL 391	Topics in Foreign Literature in English Translation ²
RELS 320	Taoism
RELS/PHIL 322	Tibetan Buddhism
RELS/PHIL/INTL 410	The Chinese Tradition in Philosophy
RELS/PHIL/INTL 412	Zen Buddhism
RELS 442	Seminar in Hinduism
WRLD/INTL 203	Cultural Texts and Contexts: ____ ²
WRLD 220	Human Rights and Literature ²
WRLD 391	Topics in World Languages and Cultures ²
WRLD 491	Topics in World Languages and Cultures ²

Total Hours **21**

European studies, minor in

The European studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Geographically pertinent foreign languages not taught at VCU will be considered on a case-by-case basis through the School of World Studies Advising Office.

Note: Language placement test results cannot substitute for completion of course work.

Course	Title	Hours
Select a minimum of three credits of geographically pertinent foreign language course work at the advanced level (300 or above)		3
Select 15 credits from the following:		15
Select a minimum of three credits from the following:		
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 310	The Early Middle Ages	
HIST 311	High and Later Middle Ages	

HIST 312	Europe in the Early Modern Period, 1350-1650
HIST 313	Europe in Absolutism and Enlightenment, 1648-1815
HIST 314	The Zenith of European Power, 1815-1914
HIST 315	The Age of Total War in Europe, 1914-1945
HIST 316	Postwar Europe, 1945 to the Present
HIST 317	History of France I
HIST 318	History of France II
HIST 319	History of Germany I
HIST 320	History of Germany II
HIST 321	The Holocaust
HIST 322	Nazi Germany
HIST 324	History of Early Modern Britain
HIST 325	History of Modern Britain
HIST 327	History of Russia I
HIST 328	History of Russia II
HIST 329	History of Spain and Portugal
HIST 330/ GSWS 339	History of Women in Europe I
HIST 331/ GSWS 340	History of Women in Europe II
Select a minimum of three credits from the following:	
ANTH/INTL 455	Anthropology of Development and Globalization ¹
INTL 490	Senior Capstone in International Studies ¹
INTL 491	Topics in International Studies ¹
MKTG/INTL 320	International Marketing
POLI/INTL 352	European Governments and Politics
POLI/INTL 354	Russian and Post-Soviet Politics
RELS 310	Mediterranean Religions
URSP 350/ FRLG 345/INTL 345	Great Cities of the World ¹
WRLD/INTL 203	Cultural Texts and Contexts: ____ ¹
WRLD 391	Topics in World Languages and Cultures ¹
WRLD 491	Topics in World Languages and Cultures ¹
Select a minimum of three credits from the following:	
FREN 320	French Civilization and Culture I
FREN 321	French Civilization and Culture II
FREN 330 & FREN 331	Survey of Literature and Survey of Literature
FREN 420	French Regional Culture
FREN 421	French Contemporary Culture
FREN 425	French Media
FREN/INTL 450	Francophone Literatures and Cultures ¹
GRMN 320	From the Vandals to Kant: Civilization and Literature I

GRMN 321	From Faust to Nazism: Civilization and Literature II	
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	
GRMN 420	The Turn of the Century	
GRMN 423	Folk/Popular Culture	
GRMN 424	Culture and Society	
INTL/FLET 391	¹	
ITAL 320	Italian Cinema: ____	
ITAL 330	Themes in Italian Literature: ____	
ITAL 391	Topics in Italian	
RUSS 311	Conversation and Media	
RUSS 330	Literature and Culture: ____	
RUSS 422	Russian Film	
RUSS 491	Topics in Russian	
SPAN 320	Civilization of Spain I	
SPAN 330	Survey of Spanish Literature	
SPAN 420	Civilization of Spain II	
WRLD 230	Introduction to World Cinema	
Total Hours		18

¹

When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an approved study abroad program in an appropriate location must be pre-approved through the SWS Advising Office.

Students majoring in art history may apply three credits of an art history course relevant to Europe toward the minor. The art history course must be approved through the SWS Advising Office.

French, minor in

A minor in French requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

Course	Title	Hours
FREN 201	Intermediate French (or 300-level FREN course) ¹	3
FREN 202	Intermediate French Readings (or 300-level FREN course) ¹	3
or FREN 205	Intermediate Conversation	
Choose a minimum of 12 credits of course work at the 300 level or higher		12
Total Hours		18

¹

Students who place through the intermediate level and begin taking French at the 300 level cannot count FREN 201, FREN 202 or FREN 205 toward the minor. These students are required to complete all 18 credits of the minor through course work at the 300 level or above.

German, minor in

A minor in German requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

Course	Title	Hours
GRMN 201	Intermediate German I (or 300-level GRMN course) ¹	3
GRMN 202	Intermediate German II (or 300-level GRMN course) ¹	3
or GRMN 205	Intermediate Conversation	
Choose a minimum of 12 credits at the 300 level or higher		12
Total Hours		18

¹

Students who place through the intermediate level and begin taking German at the 300 level cannot count GRMN 201, GRMN 202 or GRMN 205 toward the minor. These students are required to complete all 18 credits of the minor through course work at the 300 level or above.

International social justice studies, minor in

The international social justice studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Students must complete a minimum of three credits of foreign language course work at the advanced level (300 or above).

Note: Language placement test results cannot substitute for completion of course work.

Students choose from the following courses to complete the minor:

Course	Title	Hours
Select a minimum of three credits from the following:		3-6
WRLD 210	International Social Justice Studies	
WRLD 220	Human Rights and Literature	
Select a minimum of three credits from the following:		3-6
RELS 450/ INTL 449	Religion, Globalization and Social Justice	
RELS/AFAM/INTL 451	Religion, Racism and Social Justice	
RELS/GSWS/INTL 453	Western Religions, Women and Social Justice	
RELS 455/ INTL 456	Catholic Ethics and Social Justice	

Select three different three-credit courses, one from at least three of the following interest areas:

History, gender, race and religion:

AFAM/SOCY/ GSWS 305	African American Family in Social Context
AFAM/ANTH/ INTL/GSWS 309	Gender and Global Health
ANTH/AFAM/INTL 200	Introduction to African Societies

ANTH/AFAM/INTL 420	Women of Africa
FLET/INTL 391	Topics in Foreign Literature in English Translation
HIST 365/ GSWS 341	History of Gender and Sexuality in America I
HIST 380/ AFAM 390/GSWS 390	Forced and Coerced Labor in Africa and the Americas
POLI/GSWS 366/ INTL 368	Women and Global Politics
RELS 340/ INTL 341	Global Ethics and the World's Religions
GSWS 301	Feminist Theory
GSWS/AFAM/ POLI 318	Politics of Race, Class and Gender
WRLD 391	Topics in World Languages and Cultures

Literature:

AFAM/ENGL 363/ INTL 366	African Literature
AFAM/ENGL 365/ INTL 367	Caribbean Literature
FLET/INTL 391	Topics in Foreign Literature in English Translation
FREN/INTL 450	Francophone Literatures and Cultures ¹
SPAN 322	Hispanic Immigrants in the U.S.
SPAN 332	Latino Writers in the U.S.
SPAN 491	Topics in Spanish ¹

Politics and globalization:

AFAM/POLI 302	Politics of the Civil Rights Movement
ANTH/INTL 349	Rethinking a Continent: Latin America
ANTH/INTL 350	Rethinking a Continent: Europe
ANTH/INTL 455	Anthropology of Development and Globalization
MASC/WRLD 359	International Media Coverage: The Middle East
POLI/AFAM/INTL 356	Government and Politics of Africa
POLI/AFAM/INTL 357	Politics of Southern Africa
POLI/INTL 365	International Political Economy
POLI/GSWS 366/ INTL 368	Women and Global Politics

World cinema:

ANTH 331	Public Culture: Anthropology Through Film
FREN 422	French Cinema
GRMN 422	German Film
ITAL 320	Italian Cinema: ____
RELS 422	Religion and Film
RUSS 422	Russian Film
SPAN 422	Spanish and Latin American Cinema
WRLD 422	National Cinema

Topics courses:

ANTH 391	Topics in Anthropology ¹
FLET/INTL 391	Topics in Foreign Literature in English Translation ¹
FREN 491	Topics in French ¹
GRMN 491	Topics in German ¹
RELS 391	Topics in Religious Studies ¹
RELS 490	Senior Capstone Seminar ¹
RELS 491	Topics in Religious Studies ¹
RUSS 491	Topics in Russian ¹
WRLD 491	Topics in World Languages and Cultures ¹

Total Hours **18**

¹

Students must receive approval through the SWS Advising Office for topics courses counting toward the minor.

Italian studies, minor in

A minor in Italian studies requires at least 18 credits, none of which can be earned at the 100 level.

Course	Title	Hours
ITAL 201	Intermediate Italian	3
ITAL 202 or ITAL 205	Intermediate Italian Readings Intermediate Conversation	3
Select at least six credits at the 300 level or above from courses taught in Italian		6
Select six credits from courses taught in either Italian or English		6
Total Hours		18

Courses taught in English must focus on subjects related to Italian culture, such as literature in translation, cultural studies or Italian cinema.

Note: Language placement test results cannot substitute for completion of course work. Italian studies minors must take at least two upper-level courses at VCU in Italian.

Latin American studies, minor in

The Latin American studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline, except for SPAN; a total of nine credits of SPAN course work may be count toward the minor.

Students must complete a minimum of three credits of Spanish at the advanced level (300 or above).

Note: Language placement test results cannot substitute for completion of course work.

Students choose from the following courses to complete the minor:

Course	Title	Hours
Select a minimum of 18 credits from the following, with a maximum of only six credits per discipline:		18
ANTH/INTL 348	South American Ethnography	
ANTH/INTL 349	Rethinking a Continent: Latin America	

ANTH 391	Topics in Anthropology ¹
ARTH 335	Pre-Columbian Art and Architecture
ARTH 338	Colonial Art and Architecture of Latin America
ARTH 339	Modern and Contemporary Art and Architecture of Latin America
FLET 391	Topics in Foreign Literature in English Translation ¹
HIST 109	Survey of Latin American History
HIST 110	Survey of Latin American History
HIST 370	History of Central America
HIST 371	History of Mexico
HIST 372	History of Brazil
HIST 373	History of the Andes to 1800
HIST 374	History of the Andes From 1800
HIST 376	Caribbean History to 1838
HIST 377	Caribbean History Since 1838
HIST 391	Topics in History ¹
HIST 409	Studies in Latin American History: ____
INTL 491	Topics in International Studies ¹
POLI/INTL 353	Latin American Governments and Politics
PORT 391	Topics in Portuguese
RELS 336	Religions in Latin America
RELS 491	Topics in Religious Studies ¹
SPAN 321	Latin American Civilization I
SPAN 322	Hispanic Immigrants in the U.S.
SPAN/INTL 331	Survey of Latin American Literature
SPAN 332	Latino Writers in the U.S.
SPAN/INTL 421	Civilization of Latin America II
SPAN 430	Literary Genres ¹
SPAN 432	Hispanic Culture Through Literature
SPAN 491	Topics in Spanish ¹
WRLD 391	Topics in World Languages and Cultures ¹
WRLD 491	Topics in World Languages and Cultures ¹

Total Hours **18**

¹

When appropriate; check attributes or discuss with School of World Studies Advising before enrolling in these courses.

Middle Eastern and Islamic studies, minor in

The Middle Eastern and Islamic studies minor consists of a minimum 18 credits or 21 if the student must complete a 200-level Arabic course. A minimum of 12 credits must be earned at the upper (300 or 400) level. No more than six credits can be earned within the same discipline.

Course	Title	Hours
Required courses		9-12
ARBC 202	Intermediate Arabic II ¹	

INTL 201	Rethinking the Middle East
INTL/RELS 317	Islam
INTL 460	Contemporary Issues in Middle Eastern and Islamic Studies: ____
Approved electives	
Select nine credits from: 9	
ARBC 301	Communication and Composition
ARBC 391	Topics in Arabic: ____
ARTH 311	Early Islamic Art in a Global Context
ARTH 312	Islamic Art in a Global Context 1200 to 1600 CE
ARTH 466	Modern and Contemporary Art in the Middle East
FLET 391	Topics in Foreign Literature in English Translation (when topic is relevant)
HIST 340	The Middle East, 600-1600
HIST 341	Modern Middle East
HIST 342	Early Modern Ottoman Empire
HIST 343	Modern Ottoman Empire
INTL 316	Religious and Ethnic Minorities in the Middle East
INTL 332	Revolutions and Counterrevolutions in the Middle East
INTL 491	Topics in International Studies (when topic is relevant)
MASC 359	International Media Coverage: The Middle East
POLI 351	Governments and Politics of the Middle East
RELS 318	History of the Jewish People I
RELS 319	History of the Jewish People II
RELS 371	Women in Islam
RELS 391	Topics in Religious Studies (when topic is relevant)
RELS/INTL 409	Modern Islamic Thought and Global Trends
RELS/INTL 441	Islamic Mysticism: the Sufis
RELS 491	Topics in Religious Studies (when topic is relevant)
WRLD 220	Human Rights and Literature (when topic is relevant)
WRLD 391	Topics in World Languages and Cultures (when topic is relevant)

Total Hours **18-21**

¹

This requirement may be satisfied by equivalent course work, such as ARBC 205, or by a sufficient score on the Avant STAMP 4s Assessment for Arabic.

Religious studies, minor in

The minor in religious studies consists of 18 credits in religious studies. At least nine of the credits must be taken in upper-level courses.

Russian studies, minor in

A minor in Russian studies requires at least 18 credits, none of which may be earned at the 100 level.

Note: Language placement test results cannot substitute for completion of course work.

Course	Title	Hours
RUSS 201	Intermediate Russian	3
RUSS 202 or RUSS 205	Intermediate Russian Readings Intermediate Russian Conversation	3
Select at least three credits at the 300 level or above from courses taught in Russian		3
Select nine credits from courses taught either in Russian or in English that relate to Russian history, politics, society or culture, from the following:		9
ENGL 391	Topics in Literature ¹	
FLET/INTL 391	Topics in Foreign Literature in English Translation ¹	
HIST 327	History of Russia I	
HIST 328	History of Russia II	
HIST 389	History in Film: ____ ¹	
HIST 391	Topics in History ¹	
INTL 490	Senior Capstone in International Studies ¹	
INTL 491	Topics in International Studies ¹	
POLI/INTL 354	Russian and Post-Soviet Politics	
RUSS 311	Conversation and Media (in Russian)	
RUSS 330	Literature and Culture: ____ (in Russian)	
RUSS 422	Russian Film (in Russian)	
RUSS 491	Topics in Russian (in Russian)	
URSP/INTL 334	Regional Geography of ____ ¹	
URSP 350/ FRLG 345/INTL 345	Great Cities of the World ¹	
WRLD/INTL 203	Cultural Texts and Contexts: ____ ¹	
WRLD 220	Human Rights and Literature ¹	
WRLD 391	Topics in World Languages and Cultures ¹	
WRLD 491	Topics in World Languages and Cultures ¹	
Total Hours		18

¹

When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an approved study abroad program in an appropriate location (must be preapproved through the SWS Advising Office).

Spanish, minor in

A minor in Spanish requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

Course	Title	Hours
SPAN 201 or SPAN 300 or SPAN 301	Intermediate Spanish ¹ Advanced Grammar and Writing Advanced Grammar and Writing	3
SPAN 202 or SPAN 205 or SPAN 300 or SPAN 301	Intermediate Spanish Readings ¹ Intermediate Spanish Conversation Advanced Grammar and Writing Advanced Grammar and Writing	3
Select only one of the following conversation courses: ²		3
SPAN 305	Spanish Communication	
SPAN 307	Spanish Conversation and Film	
SPAN 311	Spanish Through the Media	
Choose a minimum of nine credits of course work at the 300 level or higher ¹		9
Total Hours		18

¹

Students who place through the intermediate level and begin taking Spanish at the 300 level cannot count SPAN 201, SPAN 202 or SPAN 205 toward the minor. These students are required to complete all 18 credits of the minor through course work at the 300 level or higher.

²

Only one of these conversation courses may count toward the completion of the minor.

World cinema, minor in

The world cinema minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level.

Note: Language Placement Test results cannot substitute for completion of course work.

Course	Title	Hours
WRLD 230	Introduction to World Cinema	3
WRLD 330	Introduction to Film Studies	3
WRLD 422	National Cinema	3
WRLD 430	Film and the City	3
Select one of the following:		3
ARTH 270	History of the Motion Picture I	
ARTH 271	History of the Motion Picture II	
ENGL 385	Fiction into Film	
Select a minimum of three credits of relevant foreign language course work at the advanced level (300 or above)		3
Total Hours		18

SCHOOL OF THE ARTS

The School of the Arts offers 25 degree programs and comprises more than 3,000 students. With the inclusion of our campus in Qatar come an additional four programs. It all began as one night class taught by Theresa Pollak in the fall of 1928.

The school strives to be a stimulating community of students and teachers who cross the boundaries of conventional art and design disciplines, apply aesthetic and intellectual vision to the expression of complex ideas, value artistic tradition and experimentation in the search for creative solutions, connect international experience with professional education, integrate technical skills with theoretical understanding and care about the impact of their work on people.

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Nancy Scott

Executive associate dean for academic administration

Melanie Buffington

Director of graduate studies

Christiana Lafazani

Associate dean for faculty affairs

Jody Symula

Assistant dean for student affairs and Art Foundation Program lead

James Wiznerowicz

Associate dean for academic affairs

Accreditation

VCU is accredited by the National Association of Schools of Art and Design, the National Association of Schools of Dance, the National Association of Schools of Music and the National Association for Schools of Theatre.

Visual arts

Visual arts degree programs

Art education, art history, cinema, communication arts, craft and material studies, fashion (design and fashion merchandising), graphic design, interior design, kinetic imaging, painting and printmaking, and sculpture

National Association of Schools of Art and Design

Art education (bachelor's and master's degrees)

National Association of Schools of Art and Design, National Council for Accreditation for Teacher Education, Virginia Department of Education

Interior design (bachelor's degree)

National Association of Schools of Art and Design, Council for Interior Design Accreditation

Performing arts

Dance and choreography (bachelor's degree)

National Association of Schools of Dance

Music (bachelor's and master's degrees)

National Association of Schools of Music

- Music education concentrations (bachelor's and master's degrees)
- National Council for Accreditation National Association of Schools of Music, for Teacher Education, Virginia Department of Education

Theatre (bachelor's and master's degrees)

National Association for Schools of Theatre

Programs

The School of the Arts offers degrees in the following areas of study:

Advanced Media Production Technology

- Post-baccalaureate undergraduate certificate

Art Education

- Master of Art Education

Art History

- Bachelor of Arts
- Master of Arts
- Doctor of Philosophy

Arts

- Bachelor of Fine Arts with a concentration in art education

Cinema

- Bachelor of Arts

Communication Arts

- Bachelor of Fine Arts

Craft and Material Studies

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

Dance and Choreography

- Bachelor of Fine Arts

Design

- Master of Fine Arts (with concentrations in design studies [at VCUQ], interior environments and visual communications)

Fashion

- Bachelor of Arts
- Bachelor of Fine Arts

Fine Arts

- Master of Fine Arts (with concentrations in ceramics, fibers, furniture design, glassworking and jewelry/metalworking; kinetic imaging; painting or printmaking; photography and film; sculpture)

Graphic Design

- Bachelor of Fine Arts

Interior Design

- Bachelor of Fine Arts

Kinetic Imaging

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

Music

- Bachelor of Arts
- Bachelor of Music
- Master of Music

Painting and Printmaking

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

Photography and Film

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

Sculpture

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

Theatre

- Bachelor of Arts
- Bachelor of Fine Arts
- Master of Fine Arts

School of the Arts Visual Resource Center

VCU's Cabell Library houses an extensive collection of books, publications and magazines on the visual and performing arts. VCU subscribes to ARTstor, the largest online image bank for the arts.

VCU is a short distance from Washington, D.C., Baltimore, Philadelphia and New York and the museums, libraries and research facilities in those urban areas.

Undergraduate information

General information

Students who have matriculated in a professional curriculum receive enrollment preference for courses in their program. However, unless otherwise indicated, all courses are open to any student in the university.

Because of the sequence in which course work is arranged, only transfer students will be considered for mid-year admission. With the exception of art history classes, all courses must be taken in their numerical sequence unless approved by the chair of the department in which they are listed.

In many of the courses, a considerable amount of work is done outside the classroom. This work is done in addition to the work done in the scheduled classes students are required to attend. Departments within the school reserve the right to retain examples of student work for permanent collections. Before enrollment, students should contact the appropriate department chair for a more detailed curriculum outline than that which appears in this bulletin.

Academic requirements

All majors in the School of the Arts must earn a minimum GPA of 2.0 in their major concentration as well as the overall GPA in order to meet the university requirements for graduation.

The department and the student's adviser periodically evaluate the record of each student. If at any time during undergraduate studies the department faculty concludes a student is not demonstrating adequate progress in the area of concentration, the student will be advised to withdraw from that department.

Some degree programs stipulate minimum GPA requirements in the major concentration higher than 2.0 and other special reviews to determine satisfactory progress in their programs. Students are advised to refer to the individual department sections in this bulletin detailing prerequisites (i.e. portfolio reviews, juries, recitals, progress review, etc.) that govern admission to advanced-level study.

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in other current departmental student handbooks or policy documents of the school's academic departments in which students are registered for courses.

Special charges

All full-time majors enrolled in the School of the Arts are charged a comprehensive fee each semester. The fee schedule (<http://accounting.vcu.edu/tuition/coursefees/#arts>) is available on the Financial Aid website. The fees are prorated to the individual departments that determine the expenditures, resulting in a rebate to the students through materials, services and/or equipment, and may include models, field trips or special lectures. Students enrolled in any of the numerous courses that require an additional outlay for materials will be billed for those individual fees by the Student Accounting Department.

Internships and cooperative education

The School of the Arts encourages qualified students to enter into limited and carefully selected internship arrangements. To assist students, departments and programs are encouraged to identify, evaluate and select internship arrangements that will expand and complement the

scope of the student's educational experience, as well as support the missions of the university, school, and department or program.

Internship arrangements are coordinated by the individual department or program and are considered university-supported activities involving enrolled students and faculty. Participants in such arrangements are subject to all applicable university policies and procedures. These policies and procedures include, but are not limited to, conflict of interest, intellectual properties, faculty rights and responsibilities, and those policies and procedures outlined in the VCU Insider Student Handbook and Resource Guide.

While the School of the Arts encourages student internship arrangements, it disallows student internship arrangements when family members serve in a supervisory capacity. Should such an internship arrangement become an option, the approval of the dean must be received prior to completing any final agreement.

The School of the Arts also participates in the cooperative education program. Qualifying students can take part in this program through most departments. Contact the specific department for details.

Transfer students

Departmental faculty committees determine placement in all upper-level courses after evaluating the student's record, performance, audition and/or creative work. The student should contact the appropriate department chair at the time of acceptance to arrange for this evaluation before actual enrollment.

Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the School of the Arts provides its students the opportunity to accelerate their education through "credit by examination." The conditions under which credit by examination (p. 38) may be given as well as the procedures are outlined in the "Admission to the university" section of this bulletin.

500-level courses

500-level courses are available only to upper-division undergraduate students with the approval of the chair of the department that offers the course.

Arts honors

Undergraduate arts majors may earn arts honors. A student must be enrolled in The Honors College and a major within the School of the Arts. To earn arts honors, students must complete 15 credits of arts honors courses and a senior capstone course or experience (this varies with each major).

Arts honors graduates will be recognized at commencement with special regalia, and the distinction is noted on the transcript.

Inquires should be directed to Jody Symula, director of student services. Interested students can email jlsymula@vcu.edu for an advising appointment.

Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate)

The certificate in advanced media production technology is a 24-credit post-baccalaureate undergraduate certificate program available to students pursuing the study of advanced digital media and post-production techniques. The certificate is designed to blend creative skills with the technical expertise required to compete for employment in the field of digital media. Students in the program are encouraged to approach the development of digital media with a cross-disciplinary, entrepreneurial spirit and to apply information and communications technology in novel ways. Students who receive a certificate through this program equip themselves for many opportunities in the professional digital media community of both production and post-production providers.

Special requirements

Students must possess a baccalaureate degree from an accredited academic institution and apply through the School of the Arts for admission. A minimum GPA of 2.5 is required for graduation.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Evaluate and determine production goals for digital media
2. Create and produce professional-level digital media
3. Demonstrate broad-based knowledge in the components of audio production
4. Demonstrate broad-based knowledge in the core components of post-production
5. Work in professional post-production business and virtual production environments

Degree requirements for Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate)

Course	Title	Hours
AMPT 401	Listen and Capture	3
AMPT 402	Editorial Storytelling	3
AMPT 403	Emerging Digital Cinema	3
AMPT 404	Concept Development	3
Area of emphasis (select one)		3
AMPT 495	Sound Manipulation	
AMPT 496	Finishing the Story	
AMPT 497	Mastering Digital Cinema	
Electives (select three) ¹		9
AMPT 422	Gaming Technologies	
AMPT 423	Motion Graphics	
AMPT 424	Music Production Techniques	
AMPT 425	Light and Image	
AMPT 426	Foley and Sound Design	

Total Hours

24

1

Additional electives may be available, please consult adviser for options.

The minimum total of credit hours required for this certificate is 24.

Sample plan of study

Fall semester		Hours
AMPT 401	Listen and Capture	3
AMPT 402	Editorial Storytelling	3
AMPT 403	Emerging Digital Cinema	3
AMPT 404	Concept Development	3
Term Hours:		12
Spring semester		Hours
AMPT 495	Sound Manipulation	3
or	or Finishing the Story	
AMPT 496	or Mastering Digital Cinema	
or		
AMPT 497		
AMPT electives		9
Term Hours:		12
Total Hours:		24

The minimum total of credit hours required for this certificate is 24.

Art Foundation Program

Jody Symula
Program lead

arts.vcu.edu/programs/art-foundation (<http://arts.vcu.edu/programs/art-foundation/>)

The mission of the Art Foundation Program is to provide an intellectually rigorous, studio-based experience in the fundamental issues of art and design while providing a platform for students to explore and discover. The program seeks to develop in its students an enthusiasm for their work, a means to reflect analytically and an ability to cultivate skills that will serve throughout their education. The Art Foundation Program seeks to establish connections between programs in art and design and to participate in a larger forum of ideas and concepts relevant to all of the disciplines.

Completion of the Art Foundation Program is a prerequisite for entry into all fine art and design departments: Art Education, Communication Arts, Craft and Material Studies, Fashion Design, Graphic Design, Interior Design, Kinetic Imaging, Painting and Printmaking, Photography and Film, and Sculpture and Extended Media.

After successfully completing all components of the major declaration process, completing all course requirements and achieving the minimum department grade point average students progress to their choice of major department.

Transfer students in art and design are also required to complete the Art Foundation Program but may be awarded transfer credits on a case-by-case basis.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will acquire and apply knowledge of fundamental art and design techniques, concepts and approaches within their studio work.
- Students will be introduced to contemporary art and design concepts and begin to apply them in their studio work.
- Students will develop critique skills by engaging in constructive critical discourse.
- Students will develop an awareness of professional opportunities and resources within the university and the external arts community.
- Students will develop a body of studio course work submitted for assessment.

Requirements for Art Foundation Program

Course	Title	Hours
Art Foundation studios		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 138	Project Seminar	2
or ARTF 139	Project Studio	
Art history component		
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Total Hours		20

The Art Foundation Program requires 20 credits.

This is a sample plan of the Art Foundation Program, please consult with your adviser for details. Please note the Art Foundation studio and research courses are not sequential.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 138	Project Seminar	1
or	or Project Studio	
ARTF 139		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		16
Spring semester		Hours
ARTF 132	Surface Research	3
ARTF 134	Time Studio	3

ARTF 138 or ARTF 139	Project Seminar or Project Studio	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16
Total Hours:		32

- Gain an international film perspective
- Create all aspects of the art of storytelling
- Produce narrative short films
- Develop creative collaborations
- Synthesize other disciplines with filmmaking

Special requirements

Students must maintain a minimum cumulative GPA of 2.0 in the program.

Majors in the Cinema Program may choose to complete a second major or minor in any other department or program that supports their educational and artistic goals. Alternatively, students may create a customized plan of study for a second major by requesting admission to the Bachelor of Interdisciplinary Studies program.

Cinema Program

TyRuben Ellingson

Program director

The Bachelor of Arts in Cinema is focused on narrative movie production. Consequently, the program is designed to advance conceptual understanding of visual storytelling and to teach and practice the technical methodologies foundational to movie-making.

Cinema majors collaborate on student productions under the supervision of faculty with professional production experience. Each summer session, students and faculty work collectively on a series of films funded by the School of the Arts.

- Cinema, Bachelor of Arts (B.A.) (p. 381)

Cinema, Bachelor of Arts (B.A.)

The Bachelor of Arts in Cinema is focused on narrative movie production. Consequently, the program is designed to advance conceptual understanding of visual storytelling and to teach and practice the technical methodologies foundational to movie-making.

Cinema majors collaborate on student productions under the supervision of faculty with professional production experience. Each summer session, students and faculty work collectively on a series of films funded by the School of the Arts.

Course work explores the proper use of motion picture cameras, lights, sound recording equipment and editorial software. Students also learn the history and theory of film, and develop skills in screenwriting, producing, directing and the business of movie-making.

The B.A. in Cinema requires a minimum of 120 credits, including 48 in the major. At least 45 of the 120 credits must be taken as 300- and 400-level courses. Students are admitted directly into the cinema program and are not required to complete the Art Foundation Program.

Many full-time students enrolled in the cinema program graduate with their B.A. degree after the successful completion of the summer session following their third year.

Student learning outcomes

Upon completing this program, students will be able to:

- Operate film equipment and screenwriting, editing, scheduling and budgeting software

Degree requirements for Cinema, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CINE 100	Visual Storytelling I	2
CINE 101	Visual Storytelling II	2
CINE 110	Writing for Cinema I	3
CINE 111	Writing for Cinema II	3
CINE 200	Cinema Form and Concept I	2
CINE 201	Cinema Form and Concept II	2
CINE 210	Synergetic Film Production	3
CINE 300	Cinema Form and Concept III	2
CINE 301	Cinema Form and Concept IV	2
CINE 390	Digital Cinema Production Intensive I	12
CINE 490	Digital Cinema Production Intensive II	15
Ancillary requirements		
ARTH 270 & ARTH 271	History of the Motion Picture I and History of the Motion Picture II	6
Open electives		
Select any courses toward a minor, second major or electives.		36
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
ARTH 270	History of the Motion Picture I	3
CINE 100	Visual Storytelling I	2
CINE 110	Writing for Cinema I	3

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		14
Spring semester		
ARTH 271	History of the Motion Picture II	3
CINE 101	Visual Storytelling II	2
CINE 111	Writing for Cinema II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		14
Summer semester		
CINE 390	Digital Cinema Production Intensive I	12
Term Hours:		12
Sophomore year		
Fall semester		
CINE 200	Cinema Form and Concept I	2
CINE 210	Synergetic Film Production	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Courses toward a minor, second major or electives		3
General education courses		6
Term Hours:		17
Spring semester		
CINE 201	Cinema Form and Concept II	2
Courses toward a minor, second major or electives		8-9
General education courses		6
Term Hours:		16
Summer semester		
CINE 490	Digital Cinema Production Intensive II	15
Term Hours:		15
Junior year		
Fall semester		
CINE 300	Cinema Form and Concept III	2
Courses toward a minor, second major or electives		11-12
General education course		3
Term Hours:		16
Spring semester		
CINE 301	Cinema Form and Concept IV	2
Courses toward a minor, second major or electives		14-15
Term Hours:		16
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Department of Art Education

Ryan Patton, Ph.D.

Associate professor and chair

arts.vcu.edu/arteducation (<http://arts.vcu.edu/arteducation/>)

The Department of Art Education supports instruction in art that encourages the construction of meaning. Faculty and students are actively involved with the art world, education and local and global communities through art-based service-learning, visual culture studies, critical thinking, exhibition, assessment, curriculum, critical theory and emerging digital technologies (virtual and interactive).

The department emphasizes interdisciplinary connections throughout the School of the Arts and the university as a whole. Through their own research and instruction, art teacher candidates engage their students and themselves in traditional and nontraditional forms of inquiry to contribute to the continuing growth and strength of the profession.

- Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education (p. 382)

Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education

The Bachelor of Fine Arts in Arts with a concentration in art education is an approved teacher preparation program that complies with the professional standards of the Virginia Department of Education and the Southern Association of Colleges and Schools. It is further accredited by the National Council for Accreditation of Teacher Education and the National Association of Schools of Art and Design. All of these agencies assure the highest professional program standards. Graduates of the program are eligible for Virginia teacher licensure to teach art in pre-kindergarten through grade 12.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will develop a professional philosophical position about the relevance and importance of art education.
- Students will implement/acquire a variety of art instructional strategies that reflect an understanding of the artistic, cognitive, emotional and social development of children, as well as national, state and local curricular standards and assessment techniques, in order to meet the needs of diverse learners.
- Students will be able to create and adapt learning environments that address the needs of all students.
- Students will be able to design assessment methods to measure student knowledge and skills, improve student learning and further professional practice.
- Students will teach art in ways that engage traditional and contemporary artists (diverse in regards to gender, ethnicity, sexual identity, social class and other dimensions of identity).
- Students will seek internships, service-learning positions and local, national and international experiences that lead to research and deepen engagement with diverse communities.

Special requirements

Admission

Undergraduate students admitted to the School of the Arts who have successfully completed the Art Foundation Program (or the equivalent at another institution) are eligible to apply through the Department of Art Education to enter the program.

Students currently attending VCU must have a minimum cumulative GPA of 2.0 to be considered for departmental admission; however, there is a higher cumulative GPA requirement of 2.8 for departmental admission to teacher preparation (see below for more information).

Accepted students

Accepted students are required to attend an orientation session with an academic adviser from the Department of Art Education. Transfer students, second-degree-seeking students, double majors and change of major students are required to meet with the administrative director prior to beginning course work in the department. The name and contact information of academic advisers may be obtained from the Department of Art Education.

Art education policy of reasonable progress

A student seeking a B.F.A. in Arts with a concentration in art education who does not enroll in courses in the major for three or more consecutive semesters (not including summers) will be dismissed from the program. To continue in the program, students must reapply to the program, submitting a portfolio and undergoing a grade review. Declared double majors not enrolled in ARTE courses for three consecutive semesters (not including summers) are required to state their intention to continue the major in writing to the chair.

Course failures and withdrawals

All students must successfully complete the courses outlined in the curriculum. Students must earn a minimum grade of C in all ARTE courses. A student who earns a grade of D or F or withdraws from any required course may repeat the course once. If a grade of D or F is earned in the repeated course or if the student withdraws, the student will be terminated from the program. Students with special circumstances who wish to remain in the major must appeal to the chair and receive approval in writing to continue in the program.

Cautionary status

If a student's GPA falls below a 2.8 or if a faculty member raises concerns about a student's professional disposition at any point, the student will be put on cautionary status. The chair will review students designated with cautionary status each semester to determine continuation in the program. Students will be notified if they are placed on cautionary status.

Pre-teacher preparation

During the first two semesters in the Department of Art Education, students should complete ARTE 310 during the fall semester and ARTE 311 during the spring semester. Note: ARTE 310 is a prerequisite of ARTE 311.

Students will be required to register for and take the required Virginia Communication and Literacy Assessment exam during ARTE 310. Students must successfully pass the VCLA exam in order to be eligible for departmental admission into teacher preparation (see below for further explanation).

It is advised that students complete ARTE 250, EDUS 301 and SEDP 330 or ARTE 450 during their first year in the Department of Art Education.

Teacher Preparation Program

All students are required to apply for teacher preparation during ARTE 311. Students who do not have passing test scores at that time will be eligible to reapply in the fall for spring teacher prep admission. Students are granted provisional teacher prep acceptance pending successful second year review.

Applications are due to the administrative director by established deadlines of each semester. If students do not complete their applications on time with official copies of passing score reports, they will not be guaranteed enrollment in ARTE 401 the following semester.

Requirements for departmental admission to teacher preparation:

- Submission of completed Application to Teacher Preparation form by established deadline
- Minimum of 2.8 cumulative GPA
- Successful completion of ARTE 310 and ARTE 311 (six credits)
- Successful completion or enrollment in EDUS 301
- Passing scores on required VCLA exam
- Submission of SAT or ACT scores
- No record of a felony conviction
- Completion of the Dispositions Acknowledgement Form (included with departmental Application for Teacher Preparation)
- Successful second-year review

Departmental admission to the Teacher Preparation Program is required for enrollment in practicum courses (ARTE 401 and ARTE 402) and clinical internship (ARTE 404, TEDU 485 and TEDU 486). Note: ARTE 401 is a prerequisite of ARTE 402. Enrollment is granted to practicum courses through an override from the Department of Art Education.

Second-year review

A review of student work, GPA and dispositions takes place at the completion of ARTE 311. Reviews are rated satisfactory unsatisfactory or provisional. The student must receive a satisfactory or provisional evaluation from the faculty to continue in the program. Students who receive provisional approval will be reviewed by the chair after each practicum to determine continuation in the program.

Students must register for and take the required Praxis II: Art Content Knowledge exam (www.ets.org) before they apply for clinical internship (student teaching).

During teacher preparation, students will continue to complete required art history, studio and general studies course work.

Clinical internship

All students are required to complete a full semester of clinical internship (student teaching). Students must complete and submit an application to clinical internship by the established deadline in order to be eligible. If students do not complete their applications on time with hard copies of passing score reports, they will not be guaranteed acceptance into clinical internship. Students are granted provisional student teaching acceptance pending successful faculty practicum review.

Requirements for clinical internship:

- Departmental admission into the Teacher Preparation Program
- Submission of completed departmental application for clinical internship by established deadline
- Successful completion of all other required course work
- Minimum of 3.0 cumulative GPA
- Passing scores on the Virginia Communication and Literacy Assessment
- Passing scores on the Praxis II: Art Content Knowledge exam
- Completion of the online Child Abuse Prevention training and certification of successful completion
- Submission of a tuberculosis screening must accompany the application for clinical internship and must be dated no more than a year from the expected date of completion of clinical internship
- Successful faculty practicum review

Degree requirements for Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ARTE 250	Computer Technology in Art Education	3
ARTE 310	Foundations of Art Education	3
ARTE 311	Art Education Curriculum and Instructional Procedures	3
ARTE 401	Art Education Elementary Materials and Practicum	4
ARTE 402	Art Education Secondary Materials and Practicum	4
ARTE 404	Clinical Internship Seminar	1
TEDU 485	Directed Student Teaching I	6
TEDU 486	Directed Student Teaching II	6
• Additional major requirements		
EDUS 301	Human Development and Learning	3
ARTE 450 or SEDP 330	Art for the Exceptional Student Survey of Special Education	3
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
PAPR 201	Painting From Observation	4
SCPT 211	Basic Sculpture I	4
Electives (see lists below)		

2-dimensional elective	3
3-dimensional elective	3
Ceramics elective	4
Contemporary art history	3
Non-Western art history	3
Photography elective	3
Studio art or art history electives (any courses from ARTE, ARTH, COAR, CRAF, PAPR, PHTO, SCPT)	7
Total Hours	120

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
2-dimensional elective		
ARTE 408	Two-dimensional Art Experiences	3
PAPR course numbered 200-499		
PHTO course numbered 200-499		
3-dimensional elective		
ARTE 409	Three-dimensional Art Experiences	3
CRAF course numbered 200-499		
SCPT course numbered 200-499		
Ceramics elective		
CRAF 240	Introduction to Ceramics	4
Contemporary art history		
ARTH 302	Introduction to Museums	3
ARTH 303	History of Art Museums	3
ARTH 333	Modern Architecture	3
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	3
ARTH 342	African-American Art	3
ARTH 348	Art of the African Diaspora	3
ARTH 357	Women, Art and Society	3
ARTH 359	Studies in Aesthetics, Theory and Criticism of Art	3
ARTH 365	Modern Art	3
ARTH 366	Contemporary Art	3
ARTH 368	Pop Art	3
ARTH 372	History of Photography	3
ARTH 439	Studies in 20th-century Art	3
ARTH 440	Modern and Contemporary Art and Architecture of Africa	3
Literature		
ENGL 201	Western World Literature I	3
ENGL 202	Western World Literature II	3
ENGL 203	British Literature I	3
ENGL 204	British Literature II	3
ENGL 205	American Literature I	3
ENGL 206	American Literature II	3
ENGL 215	Reading Literature	3
ENGL/GSW 236	Women in Literature	3
ENGL/TEDU 386	Children's Literature I	3
Non-Western art history		

ARTH 207	Global Art History	3
ARTH 245	Survey of Asian Art	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 338	Colonial Art and Architecture of Latin America	3
ARTH 347	Studies in Asian Art	3
ARTH 349	Body Adornment, Masks and Masking in Africa	3
ARTH 351	Oceanic Art and Architecture	3
ARTH/AFAM 358	African Art and Architecture	3
ARTH 449	Studies in Asian Art	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African Art	3
ARTH course numbered 445-454		
Photography elective		
ARTE 407	Photography in Art Education	3
PHTO 243	Darkroom	3
PHTO 245	Design Photography I	3
PHTO 491	Topics in Photography and Film	1-4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3

Term Hours: 16

Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3

Term Hours: 16

Sophomore year

Fall semester

ARTE 250	Computer Technology in Art Education	3
ARTE 310	Foundations of Art Education	3
EDUS 301	Human Development and Learning	3
SCPT 211	Basic Sculpture I	4
General education course		3

Term Hours: 16

Spring semester

ARTE 311	Art Education Curriculum and Instructional Procedures	3
PAPR 201	Painting From Observation	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
General education course		3

Term Hours: 16

Junior year

Fall semester

ARTE 401	Art Education Elementary Materials and Practicum	4
General education course		3
General education course		3
Non-Western art history		3
Photography elective		3

Term Hours: 16

Spring semester

ARTE 402	Art Education Secondary Materials and Practicum	4
CRAF 240	Introduction to Ceramics	4
2-dimensional studio elective		3
Contemporary art history		3

Term Hours: 14

Senior year

Fall semester

ARTE 450	Art for the Exceptional Student	3
3-dimensional elective		3
Studio art/art history electives		7

Term Hours: 13

Spring semester

ARTE 404	Clinical Internship Seminar	1
TEDU 485	Directed Student Teaching I	6
TEDU 486	Directed Student Teaching II	6

Term Hours: 13

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Department of Art History

Carolyn Phinizy, Ph.D.

Assistant professor and chair

arts.vcu.edu/arhistory (<http://arts.vcu.edu/arhistory/>)

The Department of Art History offers programs that acquaint students with the humanistic discipline of art historical inquiry. While providing

students with the opportunity for a broad education drawing on the liberal arts and humanities, the department also emphasizes a close bond with the studio and performing arts and enjoys a close relationship with the other departments in the School of the Arts.

The department offers a broad-based education in the humanistic discipline of art history at the baccalaureate, master's and doctoral levels.

Overseas studies are available through university-sponsored programs abroad in Europe and Asia. Graduate assistantships and fellowships are available to full-time graduate students.

- Art History, Bachelor of Arts (B.A.) (p. 386)
- Art history, minor in (p. 389)

Art History, Bachelor of Arts (B.A.)

The B.A. in Art History is a liberal arts program composed of an academic course of study exposing the student to the scholarship, theoretical perspectives and research methods of not only the history of art, but related disciplines in the humanities. Courses focus on cultures, historical periods and regions. The program also includes possibilities for directed research projects as well as museum internships. This curriculum provides students the best possible background for future graduate work in art history.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will demonstrate a command of art historical terminology and the ability to identify key works of art in relationship to historical contexts.
- Students will demonstrate the ability to conduct rigorous research and write papers that incorporate visual analysis and current scholarship in the interpretation of artworks.
- Students will demonstrate the ability to read critically and apply art historical research methods used in research papers.
- Students will demonstrate the ability to interpret works of art in relationship to the historical, cultural and/or geographical contexts in which they were made.

Special requirements

Art history majors must earn a minimum grade of C in each ARTH course to be applied to the curriculum requirements.

Degree requirements for Art History, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3
ARTH 292	Writing for Art History	3
ARTH 390	Art Historical Methods	3

ARTH 490	Senior Seminar in Art History	3
• Major electives		
Cluster A (select two courses from the list below)		6
Cluster B (select three courses from the list below)		9
Cluster C (select two courses from the list below)		6
Unrestricted ARTH electives (select any two additional ARTH courses)		6
Ancillary requirements		
FREN 202	Intermediate French II	3
or GRMN 202	Intermediate German II	
or ITAL 202	Intermediate Italian II	
or SPAN 202	Intermediate Spanish II	
Fine arts studio (CRAF, SCPT, PAPP or PHTO)		3
HIST 3XX (any 300-level HIST course)		12
Humanities 3XX (AFAM, ANTH, RELS, GSWS, ENGL, PHIL, WRLD)		9
Open electives		
Select any course ¹		18-21
Total Hours		120

¹

Includes language (101, 102 and 201, if needed)

The minimum number of credit hours required for this degree is 120.

Art history course selections

Course	Title	Hours
Cluster A		
ARTH 300	Prehistoric and Ancient Art and Architecture	3
ARTH 305	Classical Art and Architecture	3
ARTH 310	Medieval Art and Architecture	3
ARTH 315	Renaissance Art and Architecture	3
ARTH 320	Baroque and Rococo Art and Architecture	3
ARTH 324	18th-century Art in Europe	3
ARTH 338	Colonial Art and Architecture of Latin America	3
Cluster B		
ARTH 270	History of the Motion Picture I	3
ARTH 271	History of the Motion Picture II	3
ARTH 302	Introduction to Museums	3
ARTH 303	History of Art Museums	3
ARTH 325	19th-century Art in Europe	3
ARTH 333	Modern Architecture	3
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	3
ARTH 342	African-American Art	3
ARTH 344	American Art History	3
ARTH 348	Art of the African Diaspora	3
ARTH 349	Body Adornment, Masks and Masking in Africa	3
ARTH 357	Women, Art and Society	3

ARTH 359	Studies in Aesthetics, Theory and Criticism of Art	3
ARTH 365	Modern Art	3
ARTH 366	Contemporary Art	3
ARTH 367	German Expressionism	3
ARTH 368	Pop Art	3
ARTH 370	History of Animated Film	3
ARTH 372	History of Photography	3
ARTH 374	Studies in Film	3
ARTH 439	Studies in 20th-century Art	3
ARTH 440	Modern and Contemporary Art and Architecture of Africa	3
ARTH 444	Studies in the Art of the United States	3
Cluster C		
ARTH 207	Global Art History	3
ARTH 245	Survey of Asian Art	3
ARTH 304	Art of Ancient African Cultures and Kingdoms	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 347	Studies in Asian Art	3
ARTH 351	Oceanic Art and Architecture	3
ARTH 358	African Art and Architecture	3
ARTH 449	Studies in Asian Art	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African Art	3
Miscellaneous		
ARTH 291	Special Topics ²	3
ARTH 361	The Human Condition: An Arts Perspective	3
ARTH 369	Studies in Museum Methods	3
ARTH 391	Special Topics ²	3
ARTH 493	Museum Internship	3-6
ARTH 489	Topics in Advanced Art History ²	3
ARTH 497	Directed Research Project	3

2

Students must seek departmental approval to apply ARTH 291, ARTH 391 or ARTH 489 toward the appropriate required elective category.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTH 103	Survey of Art I	3
FREN 101	Beginning French I (or elective if language requirement met)	3
or GRMN 101	or Beginning German I	
or ITAL 101	or Beginning Italian I	
or SPAN 101	or Beginning Spanish I	
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3

video for Focused Inquiry I	
General education course	3
HIST 3XX (any 300-level course)	3

Term Hours: 15

Spring semester		
ARTH 104	Survey of Art II	3
FREN 102	Beginning French II (or elective if language requirement met)	3
or GRMN 102	or Beginning German II	
or ITAL 102	or Beginning Italian II	
or SPAN 102	or Beginning Spanish II	

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
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video for Focused Inquiry II	
General education course	3
HIST 3XX (any 300-level course)	3

Term Hours: 15

Sophomore year		
Fall semester		
FREN 201	Intermediate French I (or elective if language requirement met)	3
or GRMN 201	or Intermediate German I	
or ITAL 201	or Intermediate Italian I	
or SPAN 201	or Intermediate Spanish I	

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
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ARTH major electives ¹	3
General education course	3
General education course	3

Term Hours: 15

Spring semester		
ARTH 292	Writing for Art History	3
FREN 202	Intermediate French II (or elective if language requirement met)	3
or GRMN 202	or Intermediate German II	
or ITAL 202	or Intermediate Italian II	
or SPAN 202	or Intermediate Spanish II	

ARTH major elective ¹	3
----------------------------------	---

General education course	3
HIST 3XX (any 300-level course)	3

Term Hours: 15

Junior year		
Fall semester		
ARTH major electives ¹	6	
Fine arts studio (CRAF, SCPT, PAPP or PHTO)	3	
HIST 3XX (any 300-level course)	3	
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWs, ENGL, PHIL or WRLD)	3	

Term Hours: 15

Spring semester	
ARTH 390 Art Historical Methods	3
ARTH major electives ¹	6
General education course	3
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWS, ENGL, PHIL or WRLD)	3
Term Hours:	15
Senior year	
Fall semester	
ARTH 490 Senior Seminar in Art History (capstone)	3
ARTH major elective ¹	3
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWS, ENGL, PHIL or WRLD)	3
Open electives	6
Term Hours:	15
Spring semester	
ARTH major electives ¹	6
General education course	3
Open electives	6
Term Hours:	15
Total Hours:	120

1

See degree requirements for course distribution.

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.A.

The accelerated B.A. and M.A. program allows academically talented students to earn both the B.A. and M.A. in Art History in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. The accelerated program may be undertaken in either concentration. Students in the program may count up to 12 hours of graduate courses toward both the B.A. and M.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

This option offers students a faster and more cost-effective path to professional success by making them more competitive for jobs in the field immediately following graduation and for admission to doctoral programs in art history. Students holding these degrees will attain the skills considered critical to success in the field and continued advanced study in art history, including the ability to apply critical and analytical concepts, frameworks and methods; the ability to contextualize scholarship in relationship to existing art historical/museological knowledge, discourse and/or debate; the ability to translate art historical scholarship written in a language or languages relevant to their research; and the ability to conduct scholarly inquiry that makes a scholarly professional contribution.

Admission to the program

Minimum qualifications for admittance to the program include completion of 54 undergraduate credit hours, including a minimum of 21 credits of art history course work (may include AP and transfer courses); an overall GPA of 3.0; and a GPA of 3.5 in art history course work. Applicants should have completed or be enrolled in ARTH 390.

Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students must initiate the approved graduate work in a fall semester. Candidates should submit applications in the prior spring semester, no later than April 15. Students must provide the names of two art history faculty who can provide recommendations as well as a statement of interest and a writing sample that demonstrates an aptitude for research. Students who are interested in the accelerated program should consult with the faculty adviser to the art history master's program before they have completed 84 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate art history adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Art History degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for required open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate art history courses that may be taken as an undergraduate, once a student is admitted to the program, are listed below.

Course	Title	Hours
ARTH 690	Historiography and Methodology of Art History	3
Museum studies seminar (select one)		3
ARTH 681	Museums and Communities	
ARTH 682	The Museum as Educational Institution	
ARTH 683	Museum Collections	
ARTH 684	Curating Museum Exhibitions	
Historical studies seminar (select two)		6
ARTH 722	Seminar in 19th-century Art	
ARTH 723	Seminar in 20th-century Art	
ARTH 742	Seminar in Trans-millennial Art and Ideas	
ARTH 743	Seminar in Art and Representation	

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
ARTH major electives		6
Fine arts studio (CRAF, SCPT, PAPER or PHTO)		3
HIST 3XX (any 300-level course)		3
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWS, ENGL, PHIL or WRLD)		3
Term Hours:		15
Spring semester		
ARTH 390	Art Historical Methods	3
ARTH major electives		6
General education course		3
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWS, ENGL, PHIL or WRLD)		3
Term Hours:		15
Senior year		
Fall semester		
ARTH 490	Senior Seminar in Art History	3
ARTH 690	Historiography and Methodology of Art History	3
ARTH 722	Seminar in 19th-century Art	3
or ARTH 723	Seminar in 20th-century Art	
or ARTH 742	Seminar in Trans-millennial Art and Ideas	
or ARTH 743	Seminar in Art and Representation	
ARTH major elective		3
Humanities 3XX (300-level AFAM, ANTH, RELS, GSWS, ENGL, PHIL or WRLD)		3
Term Hours:		15
Spring semester		
ARTH 681	Museums and Communities	3
or ARTH 682	The Museum as Educational Institution	
or ARTH 683	Museum Collections	
or ARTH 684	Curating Museum Exhibitions	
ARTH 722	Seminar in 19th-century Art	3
or ARTH 723	Seminar in 20th-century Art	
or ARTH 742	Seminar in Trans-millennial Art and Ideas	
or ARTH 743	Seminar in Art and Representation	
ARTH major electives		6
General education course		3
Term hours:		15

Art historical concentration

Course	Title	Hours
Fifth year		
Fall semester		
ARTH 683	Museum Collections	3
ARTH 695	Writing Seminar I	3

ARTH 7XX historical studies seminar		3
Term hours		9
Spring semester		
ARTH 743	Seminar in Art and Representation	3
ARTH 771	Writing Seminar II	3
ARTH 7XX historical studies seminar		3
Term hours		9

Museum studies concentration

Course	Title	Hours
Fifth year		
Fall semester		
ARTH 683	Museum Collections	3
ARTH 693	Graduate Museum Internship	3-6
ARTH 695	Writing Seminar I	3
Term hours		9
Spring semester		
ARTH 743	Seminar in Art and Representation	3
ARTH 771	Writing Seminar II	3
ARTX 6XX museum studies seminar		3
Term hours		9

Art history, minor in

A minor in art history consists of 18 credits, nine of which must be taken at the 300 level.:

Course	Title	Hours
ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3
Select ARTH courses at the 200 and 200 level open to non-majors ¹		12
Total Hours		18

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Use the courses tab above to navigate to a list of all ARTH (<http://bulletin.vcu.edu/azcourses/arth/>) courses; only one history of film class (ARTH 270, ARTH 271, ARTH 370 or ARTH 374) can be counted toward the art history minor.

Only courses in which a student earns a minimum grade of C may be applied to the minor.

Department of Communication Arts

Matt Wallin
Professor and chair

arts.vcu.edu/communicationarts

The Department of Communication Arts will cultivate engaged, innovative and technically skilled artists and designers seeking a degree centered on narrative illustration and entertainment design. By offering robust and rigorous courses that embrace all forms of media, graduates will be prepared to forge dynamic careers.

The program

Centered on a rigorous investigation of studio methods and practices, the communication arts curriculum additionally explores historical, conceptual and theoretical concerns critical to the development of a well-rounded and informed understanding of image, media, content and context.

With a history richly rooted in drawing, painting and art theory, the communication arts program is effectively tailored to provide students educational opportunities to develop the types of quality skills and meaningful understandings that are relevant and sought after in the expanding universe of communication medias.

It is a curriculum that endeavors to provide a balance between past, present and future, valuing artistic traditions and techniques, while thoughtfully embracing new tools, technologies, opportunities and outcomes.

Woven throughout the program, the study of communication arts is concerned with the powerful and timeless relationship between art and narrative – image and story – which invites each student to embrace, amplify and build upon their unique views and life experience so that they may, in the lifetime beyond university, add to humanity's ongoing evolution and unfolding.

The communication arts department offers a B.F.A. in Communication Arts as well as a B.F.A. in Communication Arts with a concentration in scientific illustration. The communication arts department also offers a minor in scientific illustration for students majoring in biology or environmental sciences.

- Communications Arts, Bachelor of Fine Arts (B.F.A.) (p. 390)
- Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific illustration (p. 391)
- Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in visual effects (p. 393)
- Scientific illustration, minor in (p. 395)
- Visual effects, minor in (p. 395)

Communication Arts, Bachelor of Fine Arts (B.F.A.)

The B.F.A in Communication Arts is for students interested in narrative illustration and entertainment design; students will explore the powerful and timeless relationship between art and narrative through drawing.

In the sophomore year, students will expand their artistic skills and conceptual understandings with courses in figure drawing, 3D modeling, visual studies of design, typography and the history of visual communication. In the junior year, students will build upon the sophomore experience with courses in digital drawing, concept drawing, sequential imaging, advanced 3D imaging and mixed-media illustration. In the senior year, students will refine their personal studio methods, develop expertise in their areas of focus, organize a portfolio and prepare for professional opportunities.

Student learning outcomes

- Students will demonstrate proficiency in observational drawing.
- Students will be able to analyze, synthesize and evaluate artwork from conceptualization to completion.

- Students will effectively apply the elements and principles of design to creative solutions.
- Students will demonstrate technical proficiency in a variety of digital and physical media.
- Students will engage with the historical and current contexts of communication arts.
- Students will demonstrate professional best practices and ethical behavior.

Special requirements

A cumulative GPA of 2.0 in the major is expected for continuance in the program.

Degree requirements for Communication Arts, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 203	Digital 3D Studio	3
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 352	History of Visual Communications I	3
COAR 353	History of Visual Communications II	3
COAR 464	Senior Portfolio	3
CREA 350	Piloting the Enterprise	3
• Additional major requirements		
COAR 210	Visual Studies: Design	3
COAR 211	Fundamentals of Typography	3
COAR 332 or COAR 432	Digital Drawing 3D Image and Movement	3
• Major electives		
COAR upper-division electives		18
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Arts upper-division electives		6
Upper-division electives		7
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3

Term Hours: 16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3

Term Hours: 16

Sophomore year

Fall semester

COAR 201	Drawing Studies: The Figure Observed	3
COAR 203	Digital 3D Studio	3
COAR 211	Fundamentals of Typography	3
COAR 352	History of Visual Communications I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 15

Spring semester

COAR 202	Drawing Studies: The Figure in Context	3
COAR 210	Visual Studies: Design	3
COAR 353	History of Visual Communications II	3
General education course		3
General education course		3

Term Hours: 15

Junior year

Fall semester

COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR upper-division elective		6

General education course	3
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Term Hours: 15

Spring semester

COAR 321	Sequential Imaging	3
COAR 332	Digital Drawing	3
or	or 3D Image and Movement	
COAR 432		
COAR upper-division elective		3
Arts upper-division elective		3
General education course		3

Term Hours: 15

Senior year

Fall semester

CREA 350	Piloting the Enterprise	3
COAR upper-division elective		3
Arts upper-division elective		3
General education course		3
Upper-division elective		3

Term Hours: 15

Spring semester

COAR 464	Senior Portfolio	3
COAR upper-division elective		6
Upper-division elective		4

Term Hours: 13

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific illustration

The B.F.A. in Communication Arts with a concentration in scientific illustration is designed for students who seek to develop the artistic skills and visual communication strategies necessary to effectively present complex and detailed scientific information. The degree requirements combine art and design courses with science courses to develop a broad base of scientific understanding and refined artistic aptitude.

The communication arts courses for the concentration mirror those for the non-concentration B.F.A., with additional requirements focused on representational drawing of scientific observations. The approved science courses allow students to pursue a focused scientific specialty or a broad understanding of scientific concepts.

Students will need to plan their academic study efficiently in order to include the appropriate science courses into the academic requirements for the B.F.A. degree. Seeking advisement during the process is highly recommended.

A student who intends to establish a professional career in medical illustration should refer to the minor in scientific illustration (p. 395).

Student learning outcomes

- Students will demonstrate proficiency in observational drawing.
- Students will be able to analyze, synthesize and evaluate artwork from conceptualization to completion.
- Students will effectively apply the elements and principles of design to creative solutions.
- Students will demonstrate technical proficiency in a variety of digital and physical media.
- Students will engage with the historical and current contexts of communication arts.
- Students will demonstrate professional best practices and ethical behavior.

Special requirements

A cumulative GPA of 2.0 in the major is expected for continuance in the program.

Degree requirements for Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific illustration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 203	Digital 3D Studio	3
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 352	History of Visual Communications I	3
COAR 353	History of Visual Communications II	3
COAR 464	Senior Portfolio	3
CREA 350	Piloting the Enterprise	3
• Additional major requirements		
COAR 332	Digital Drawing	3
COAR 341	Scientific Illustration	3
• Major electives		
COAR upper-division electives		18
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		

BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and/or AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and/or AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
Science electives (chosen from approved list below)		14
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Approved science electives

Course	Title	Hours
BIOL 103	Global Environmental Biology	4
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
BIOL 205	Basic Human Anatomy	4
BIOL 320	Biology of the Seed Plant	4
BIOL 322	Economic Botany	3
BIOL 332	Environmental Pollution	3
BIOL 333	Evolution of the Angiosperms	3
BIOL 335	Global Change Biology	3
BIOL 341	Human Evolution	4
ENVS 105	Physical Geology	3
ENVS 201	Earth System Science	3
ENVS 301	Introduction to Meteorology	3
ENVS 310	Introduction to Oceanography	3
PHIS 206	Human Physiology	3
PHYS 101	Foundations of Physics	3
PHYS 107	Wonders of Technology	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
Term Hours:		16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or ARTF 138	or Project Seminar	
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3

Term Hours: 16
Sophomore year**Fall semester**

BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and/or AOI for scientific and logical reasoning)	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
COAR 201	Drawing Studies: The Figure Observed	3
COAR 203	Digital 3D Studio	3
COAR 352	History of Visual Communications I	3

Term Hours: 13
Spring semester

CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and/or AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
COAR 202	Drawing Studies: The Figure in Context	3
COAR 353	History of Visual Communications II	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Science electives (chosen from approved list)		3-4

Term Hours: 17
Junior year**Fall semester**

COAR 300	Illustration: Drawing and Painting	3
COAR 332	Digital Drawing	3
COAR upper-division elective		3
General education course		3
Science elective (from approved list)		3-4

Term Hours: 16
Spring semester

COAR 320	Concept Drawing	3
COAR 341	Scientific Illustration	3
COAR upper-division elective		3
General education course		3
Science elective (from approved list)		3-4

Term Hours: 15
Senior year**Fall semester**

COAR 321	Sequential Imaging	3
CREA 350	Piloting the Enterprise	3
COAR upper-division elective		6
Science elective (from approved list)		3-4

Term Hours: 15
Spring semester

COAR 464	Senior Portfolio	3
COAR upper-division elective		6
General education course		3

Term Hours: 12

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in visual effects

The B.F.A. in Communication Arts with a concentration in visual effects is designed for students seeking a specialization in the artistic, technical and narrative production of digital visual effects for live-action footage.

The communication arts courses for the concentration mirror those for the non-concentration B.F.A., with additional requirements focused on 2D and 3D software, digital filming, compositing, motion-capture and applicable post-production workflows. The approved cinema course will focus on the mechanics of screenwriting to serve as a foundation for interpreting narrative storytelling into a visual effects storyboard.

The 18 credits required in the concentration will combine art and technology to develop a broad understanding of digital visual effects. A student who intends to establish a professional career in post-production and visual effects will benefit from this concentration.

Student learning outcomes

- Students will demonstrate proficiency in drawing, including the figure.
- Students will demonstrate conceptual and critical thinking.
- Students will articulate conceptual and visual ideas to communicate content.
- Students will demonstrate competence in the use of traditional media.
- Students will demonstrate competence in the use of digital media and emerging technologies.
- Students will demonstrate knowledge of the historical and current context of communication arts.
- Students will demonstrate ethical and professional practices.

Special requirements

A cumulative GPA of 2.0 in the major is expected for continuance in the program.

Degree requirements for Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in visual effects

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 203	Digital 3D Studio	3
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 352	History of Visual Communications I	3
COAR 353	History of Visual Communications II	3
COAR 464	Senior Portfolio	3
CREA 350	Piloting the Enterprise	3
• Additional major requirements		
COAR 210	Visual Studies: Design	3
• Concentration requirements		
COAR 308	Cut Scene	3
COAR 332	Digital Drawing	3
COAR 432	3D Image and Movement	3
COAR 435	3D Modeling for Concept Design	3
COAR 436	Visual Effects I	3
COAR 437	Visual Effects II	3
• Major electives		
COAR upper-division electives		3
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
Additional requirements		
CINE 217	Mechanics of Screenwriting	3
Arts upper-division electives		6
Upper-division electives		7
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general	3
Play course	education UNIV foundations)	
video for		
Focused		
Inquiry I		
General education course		3
Term Hours:		16
Spring semester		
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general	3
Play course	education UNIV foundations)	
video for		
Focused		
Inquiry II		
General education course		3
Term Hours:		16
Sophomore year		
Fall semester		
COAR 201	Drawing Studies: The Figure Observed	3
COAR 203	Digital 3D Studio	3
COAR 352	History of Visual Communications I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies	3
	general education UNIV foundations)	
General education course		3
Term Hours:		15
Spring semester		
CINE 217	Mechanics of Screenwriting	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 210	Visual Studies: Design	3
COAR 353	History of Visual Communications II	3
General education course		3
Term Hours:		15
Junior year		
Fall semester		
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 432	3D Image and Movement	3
General education course		3
Term Hours:		15
Spring semester		

COAR 308	Cut Scene	3
COAR 332	Digital Drawing	3
COAR 435	3D Modeling for Concept Design	3
Arts upper-division elective		3
General education course		3
Term Hours:		15

Senior year**Fall semester**

COAR 436	Visual Effects I	3
CREA 350	Piloting the Enterprise	3
COAR upper-division elective		3
General education course		3
Term Hours:		12

Spring semester

COAR 437	Visual Effects II	3
COAR 464	Senior Portfolio	3
Arts upper-division elective		3
Upper-division electives		7
Term Hours:		16

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Scientific illustration, minor in

The minor in scientific illustration is open only to students majoring in biology or environmental sciences. Students must apply and acceptance is based on a portfolio and application review.

A cumulative GPA of 2.0 in the minor is expected for continuance in the program.

Completion of the minor requires 21 credits in COAR courses to include the following:

Course	Title	Hours
COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 203	Digital 3D Studio	3
COAR 325	Botanical Drawing	3
COAR 332	Digital Drawing	3
COAR 341	Scientific Illustration	3
COAR 432	3D Image and Movement	3
Total Hours		21

Visual effects, minor in

Students must apply for this minor and acceptance is based on an application review. A cumulative GPA of 2.0 in the minor is expected for continuance in the program.

Completion of the minor requires 18 credits in the following courses:

Course	Title	Hours
CINE 217	Mechanics of Screenwriting	3
COAR 203	Digital 3D Studio	3
COAR 308	Cut Scene	3

COAR 432	3D Image and Movement	3
COAR 436	Visual Effects I	3
COAR 437	Visual Effects II	3
Total Hours		18

Department of Craft and Material Studies

Cynthia Myron

Assistant professor and chair

arts.vcu.edu/craft (<http://arts.vcu.edu/craft/>)

The Department of Craft and Material Studies explores the language of ceramics, glass, wood, fiber and metal. The department offers both a Bachelor of Fine Arts in Craft and Material Studies and a Master of Fine Arts in Fine Arts degree with concentrations in five disciplines: ceramics, fiber, furniture design, glassworking and jewelry/metalworking.

Students are encouraged to learn and explore through the traditional craft media. Together, faculty and students hone, improvise and redefine ancient technologies with new technologies; they bend and blend concepts and materials.

The Department of Craft and Material Studies is housed in a state-of-the-art facility that provides a safe and excellent physical environment in which to work. Students have access to well-equipped studios in each of the five media areas. The department shares the facilities with the departments of Sculpture, Painting and Printmaking, and Kinetic Imaging.

- Craft and Material Studies, Bachelor of Fine Arts (B.F.A.) (p. 395)
- Craft and material studies, minor in (p. 397)

Craft and Material Studies, Bachelor of Fine Arts (B.F.A.)

The Department of Craft and Material Studies offers a professionally oriented program that leads to a Bachelor of Fine Arts with focus areas in ceramics, fiberwork/fabric design, glassworking, metalsmithing/jewelry or woodworking/furniture design. Within these areas of specialization, courses are designed to assist students in developing concepts, personal direction, and the necessary skills and technical competencies to enable them to pursue a professional career or graduate study. In addition to the areas of study, students have the opportunity for a diverse education in the liberal arts and humanities. Students are encouraged to select courses in other schools in the university that will add to their general knowledge. A student may elect a minor area of study in any department or program offering a minor. The minor can be used to fulfill career objectives or to investigate a discipline of secondary interest.

Career opportunities for craft majors include setting up an independent studio or gallery, restoration or repair work, teaching or participating in the Artist-in-Residence programs in the public schools, and consulting and designing for industry.

Learning outcomes

Upon completing this program, students will:

1. Demonstrate an understanding of craft and its potential impact on art and culture

- Translate their creative ideas and develop a personal voice through their studio practice
- Demonstrate competency in the use of new and traditional craft techniques and media
- Utilize professional practices in the field of craft and art

Special requirements

Successful completion of the Art Foundation curriculum is required before admittance into the craft and material studies major. To enroll in an advanced-level craft and material studies course, students must have earned a minimum grade of C in all course prerequisites.

Degree requirements for Craft and Material Studies, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CRAF 282	Sophomore Seminar	3
CRAF 382	Junior Seminar	3
CRAF 480	Senior Studio/Critique Course	4
CRAF 482	Senior Seminar	3
• Major electives		
Basic craft (select from the list below)		12
Advanced craft (select from the list below)		24
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
ARTH electives (select from ARTH 145-ARTH 599)		6
ARTH non-Western elective (select from list below)		3
Studio electives (must be taken outside of the Department of Craft and Material Studies) ¹		4
Open electives		
Select any course.		8
Total Hours		120

1

Studio courses outside of the Department of Craft and Material Studies include CINE, COAR, GDES, IDES, KINE, PAPR, PHTO and SCPT.

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Art history non-Western		
ARTH 207	Global Art History	3
ARTH 245	Survey of Asian Art	3
ARTH 304	Art of Ancient African Cultures and Kingdoms	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 347	Studies in Asian Art	3
ARTH 348	Art of the African Diaspora	3
ARTH 349	Body Adornment, Masks and Masking in Africa	3
ARTH 351	Oceanic Art and Architecture	3
ARTH 358	African Art and Architecture	3
ARTH 440	Modern and Contemporary Art and Architecture of Africa	3
ARTH 449	Studies in Asian Art	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African Art	3
Basic craft		
CRAF 211	Jewelry	4
CRAF 221	Woodworking Techniques	4
CRAF 240	Introduction to Ceramics	4
CRAF 250	Introduction to Glass Fabrication	4
CRAF 260	Introduction to Textiles	4
CRAF 291	Introductory Topics in Craft/Material Studies	1-3
Advanced craft		
CRAF 301	Advanced Metal Fabrication: Forming	4
CRAF 302	Advanced Metal Fabrication: Mechanisms	4
CRAF 303	Advanced Metal Fabrication: Surface Techniques	4
CRAF 304	Advanced Metal Fabrication: Casting and Stone Setting	4
CRAF 320	Furniture Design	4
CRAF 321	Advanced Woodworking and Furniture Design	4
CRAF 322	Advanced Woodworking and Furniture Design	4
CRAF 341	Advanced Ceramics	4,6
CRAF 342	Advanced Ceramics	4,6
CRAF 344	Ceramics: Mold-Making	4
CRAF 346	Tableware	4
CRAF 351	Intermediate Glass Fabrication/Hot Forming	4
CRAF 352	Intermediate Glass Fabrication/Kiln Forming	4
CRAF 353	Glassworking: Lampworking	4
CRAF 354	Intermediate Glass Fabrication	4
CRAF 361	Intermediate Textiles: Tapestry/Weaving	4
CRAF 362	Intermediate Textiles: Pattern Weaving	4
CRAF 363	Fabric Design I	4

CRAF 364	Fabric Design II	4
CRAF 391	Topics in Craft/Material Studies	1-3
CRAF 446	Glaze Technology	3
CRAF 447	Ceramic Technology: Clay, Claybodies and Slips	4
CRAF 455	Glass Through Time	3
CRAF 481	Senior Studio/Critique Course	4
CRAF 491	Topics in Craft/Material Studies	1-3
CRAF 492	Independent Study	1-3
CRAF 493	Fieldwork	3
CRAF 494	Fieldwork	6
CRAF 591	Special Topics and Practicum	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

Sophomore year

Fall semester		Hours
CRAF 282	Sophomore Seminar	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Basic craft		4
General education course		3
General education course		3
Term Hours:		16

Spring semester

ARTH non-Western topic	3	
Basic craft	8	
Studio elective	4	
Term Hours:		15

Junior year

Fall semester

CRAF 382	Junior Seminar	3
Advanced craft		8
General education course		3
Term Hours:		14

Spring semester

ARTH elective (ARTH 145-ARTH 599)	3	
Advanced craft	8	
General education course	3	
Term Hours:		14

Senior year

Fall semester

CRAF 482	Senior Seminar (capstone)	3
ARTH elective (ARTH 145-ARTH 599)		3
Advanced craft		4
General education course		3
Open electives		2
Term Hours:		15

Spring semester

CRAF 480	Senior Studio/Critique Course	4
Advanced craft		4
Open electives		6
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Craft and material studies, minor in

Students may apply for the minor after successfully completing one 200-level craft and material studies course. Acceptance is based on a portfolio and application review. The minor requires a minimum of 18 credits and consists of the following:

Course	Title	Hours
Complete two of the following introductory craft and material studies courses:		8
CRAF 211	Jewelry	
CRAF 221	Woodworking Techniques	
CRAF 240	Introduction to Ceramics	
CRAF 250	Introduction to Glass Fabrication	
CRAF 260	Introduction to Textiles	
Complete a minimum of nine credits in upper-level craft and material studies course work		9
Complete a minimum of one additional credit in 200- to 400-level craft and material studies course work		1
Total Hours		18

Department of Dance and Choreography

arts.vcu.edu/dance (<http://arts.vcu.edu/dance/>)

The VCU Department of Dance and Choreography offers a pre-professional program that provides students with numerous opportunities for individual artistic growth in a community that values communication, collaboration and self-motivation. The department provides an invigorating educational environment designed to prepare students for the demands and challenges of a career as an informed and engaged artist in the field of dance.

Graduates of the program thrive as performers, makers, teachers, administrators and in many other facets of the field of dance. Alongside general education courses, dance-focused academics and creative-process classes (i.e. composition and choreography), dance majors are typically required to take two technique classes daily throughout the majority of their studies. The continuous study of modern/contemporary dance and ballet is a strong component of the curriculum. In addition, elective courses in partnering, jazz, hip hop, West African, contact improvisation, yoga, Pilates and other studio experiences are offered, rounding out a curriculum that also involves studies in anatomy and dance science, dance history, and music, among other areas. The program also provides opportunities for repertory experience and independent study. VCU is an accredited member of the National Association of Schools of Dance.

- Dance and Choreography, Bachelor of Fine Arts (B.F.A.) (p. 398)
- Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet (p. 400)
- Dance and choreography, minor in (p. 402)

Dance and Choreography, Bachelor of Fine Arts (B.F.A.)

The Bachelor of Fine Arts in Dance and Choreography requires a total of 120 credits, with 81 of those credits as the major core curriculum. Alongside general education courses, dance-focused academics and creative process classes (i.e. composition and choreography), dance majors are typically required to take two technique classes daily throughout the majority of their studies. The continuous study of modern/contemporary dance and ballet is a strong component of the curriculum. In addition, elective courses in partnering, jazz, hip hop, West African, contact improvisation, yoga, Pilates and other studio experiences are offered, rounding out a curriculum that also involves studies in anatomy and dance science, dance history, and music, among other areas. Within the major core there are opportunities for repertory experience and for independent study.

The dance major program is rigorous. Students' technique placement within the required major courses is determined through departmental assessment and placement processes. Formal evaluation procedures include a placement class for entering students, juried examinations at the end of the first semester of the freshman and sophomore years and every semester of the junior and senior years. In the second semester of the freshman and sophomore years the jury is folded into a comprehensive career evaluation called the Freshmen Review and the Sophomore Readmittance Exam, respectively. These career evaluations are to assess each student's progress in relationship to the standards of the program and progress toward degree completion. Students in the major program may be notified of probationary status after the Freshmen

Review. All majors must pass the Sophomore Readmittance Exam in order to continue in the major. This exam stands on its own as a separate evaluation from course grades.

The VCU dance program provides abundant opportunities for students to interact with faculty and guest artists in academic, professional, creative and performance contexts. Within the School of the Arts, dance students have frequent opportunities to work collaboratively with other students in the arts. Possibilities include the visual arts, participation in multimedia events and productions outside the dance department. Any dance major can perform in numerous formal concerts, informal showings and lecture-demonstrations produced by the department. Opportunities also are available for training in teaching, but students interested in earning state certification should consult their advisers.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students should achieve proficiency in improvisation, composition, choreography and related art forms that encourage creativity and an individual point of view.
- Students should become proficient in modern dance technique and performance and a diverse range of other dance techniques in order to maximize their potential to become versatile dancers of technical excellence.
- Students should demonstrate a global and historical perspective of dance as an art form, with an emphasis on diverse contemporary approaches to dance making, research and performance.
- Students should demonstrate writing and critical-thinking skills.
- Students should demonstrate comprehensive and theoretical understanding of the field of dance.

Special requirements

An audition is required for acceptance into the dance program. Applicants must follow the admissions guidelines for arts students as described in the "Admission to the university" section of the bulletin.

To be eligible for graduation, dance majors must meet the proficiency requirements of having completed two semesters of level IV technique (DANC 401-DANC 402) or achieved an equivalent through departmentally approved summer study. In order to graduate, students must also complete a senior project, which is a practical presentation in creative work. Senior projects are approved in multiple stages by a review committee composed of full-time faculty members. Eligibility is based on the student's overall academic record (credits earned, requirements met). Approval in stage one is based on the quality of the student's written proposal; in stage two it is based upon evaluation/review of the student's completed project proposed for presentation.

Degree requirements for Dance and Choreography, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
DANC 103	Survey of Dance History	3

DANC 104	Survey of Dance History	3
DANC 105	Improvisation	2
DANC 201 & DANC 202	Modern Dance Technique II and Workshop and Modern Dance Technique II and Workshop	6
DANC 260	Dance Production Workshop	2
DANC 301 & DANC 302	Modern Dance Technique III and Workshop and Modern Dance Technique III and Workshop	6
DANC 317	Anatomy for the Dancer	1
DANC 318	Dance Science	3
DANC 407	Teaching Methods for Dance	3
DANC 490	Senior Project	3
• Additional major requirements		
DANC 101 & DANC 102	Modern Dance Technique I and Workshop and Modern Dance Technique I and Workshop	6
DANC 107	Music and Dance Forms	2
DANC 162	Rehearsal and Performance	2
DANC 205 & DANC 206	Composition and Composition	6
DANC 303	Choreography/Performance	2
DANC 313 or DANC 413 or DANC 415	Dance in World Cultures African American Presence in American Dance, Performance and Social Contexts Black Performance Theory	3
DANC 401 & DANC 402	Modern Dance Technique IV and Workshop and Modern Dance Technique IV and Workshop	6
• Major electives		
Ballet technique (placement by department approval)		16
DANC 111 & DANZ 111	Ballet Technique I and Ballet Technique I Laboratory	
DANC 112 & DANZ 112	Ballet Technique I and Ballet Technique I Laboratory	
DANC 211 & DANZ 211	Ballet Technique II and Ballet Technique II Laboratory	
DANC 212 & DANZ 212	Ballet Technique II and Ballet Technique II Laboratory	
DANC 311	Ballet Technique III	
DANC 312	Ballet Technique III	
DANC 411	Ballet Technique IV	
DANC 412	Ballet Technique IV	
DANZ 311	Ballet Technique III Laboratory	
DANZ 312	Ballet Technique III Laboratory	
DANZ 411	Ballet Technique IV Laboratory	
DANZ 412	Ballet Technique IV Laboratory	
Creative practicum		2
DANC 304 or DANC 319 or DANC 360	Choreography/Performance Screen Dance Lighting Design for Dance	

or DANC 365	Sound Design for Dance	
or DANC 491	Topics in Dance	
Technique elective (select from list below)		2
Dance electives (select from list below)		2
Open electives		
Select any course.		9
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Technique electives		
DANC/AFAM 121	Tap Technique I	2
DANC/AFAM 122	Tap Technique I	2
DANC 126 & DANC 127	African-Caribbean Dance I and African-Caribbean Dance I	4
DANC 141	Ballroom Dancing	1
DANC 142	Ballroom Dancing	1
DANC 191	West African Dance Techniques	2
DANC 213	Beginning/Intermediate Pointe	1
DANC 251	Jazz Technique II	2
DANC 253	Pilates	1-2
DANC 254	Yoga	1-3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 315	Contact Improvisation	2
DANC 321	Partnering	2
Approved topics courses		
Dance electives		
ARTS 460	Synesthesia: Exploring Process Across Disciplines	2
DANC 230	Dance in Hollywood	3
DANC 408	Children's Pedagogy	2
DANC 455	Dance Criticism	2
DANC 460	Business of Dance	2

Approved topics courses

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
DANC 101	Modern Dance Technique I and Workshop	3
DANC 103	Survey of Dance History	3
DANC 105	Improvisation	2
DANC 111 & DANZ 111	Ballet Technique I and Ballet Technique I Laboratory	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3

General education course	3
Term Hours:	17
Spring semester	
DANC 102 Modern Dance Technique I and Workshop	3
DANC 104 Survey of Dance History	3
DANC 107 Music and Dance Forms	2
DANC 112 Ballet Technique I	3
& DANZ 112 and Ballet Technique I Laboratory	
DANC 162 Rehearsal and Performance	2
UNIV 112 Focused Inquiry II (satisfies general	3
Play course education UNIV foundations)	
video for Focused Inquiry II	
Term Hours:	16
Sophomore year	
Fall semester	
DANC 201 Modern Dance Technique II and Workshop	3
DANC 205 Composition	3
DANC 211 Ballet Technique II	3
& DANZ 211 and Ballet Technique II Laboratory	
DANC 260 Dance Production Workshop	2
General education course	3
General education course	3
Term Hours:	17
Spring semester	
DANC 202 Modern Dance Technique II and Workshop	3
DANC 206 Composition	3
DANC 212 Ballet Technique II	3
& DANZ 212 and Ballet Technique II Laboratory	
DANC 317 Anatomy for the Dancer	1
UNIV 200 Inquiry and the Craft of Argument (satisfies	3
general education UNIV foundations)	
General education course	3
Term Hours:	16
Junior year	
Fall semester	
DANC 301 Modern Dance Technique III and Workshop	3
DANC 303 Choreography/Performance	2
DANC 318 Dance Science	3
Ballet technique	2
General education course	3
Technique elective	1
Term Hours:	14
Spring semester	
DANC 302 Modern Dance Technique III and Workshop	3
DANC 313 Dance in World Cultures (Performance and	3
or Social Contexts) (interdependence work	
DANC 413 culture elective)	
or or African American Presence in	
DANC 415 American Dance, Performance and	
Social Contexts	
or Black Performance Theory	
Ballet technique	2

Creative practicum elective	2
General education course	3
General education course	3
Term Hours:	16
Senior year	
Fall semester	
DANC 401 Modern Dance Technique IV and Workshop	3
DANC 407 Teaching Methods for Dance	3
Dance elective	2
Open electives	3
Technique elective	1
Term Hours:	12
Spring semester	
DANC 402 Modern Dance Technique IV and Workshop	3
DANC 490 Senior Project (capstone)	3
Open electives	6
Term Hours:	12
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet

VCU's Department of Dance and Choreography offers a four-year degree concentration within the B.F.A. specifically designed for Richmond Ballet trainees. This unique program bridges trainee experience with the Richmond Ballet professional company and rigorous pre-professional training with a focus in modern/contemporary dance. During the first two years, students receive VCU credit for their work at the Richmond Ballet while taking general education courses, dance history and improvisation at VCU. Students then complete the degree with two years at VCU, taking courses in modern/contemporary dance, ballet, composition, dance science, teaching methods and more. There are many opportunities to perform throughout the four years. This B.F.A. program is designed for disciplined students who are interested in attaining versatility in both ballet and modern/contemporary dance while exploring creative, historical and global perspectives of the field.

A very small number of students in this degree program are offered the opportunity to join Richmond Ballet II after their first two years. Students are encouraged to discuss professional and academic plans with their advisers should this occur.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students must demonstrate proficiency in improvisation, composition, choreography and related art forms that encourage creativity and an individual point of view.
- Students must demonstrate proficiency in modern dance and a diverse range of other dance techniques. The objective is to maximize students' potential to become versatile dancers of technical excellence.

- Students must demonstrate a global and historical perspective of dance as an art form with an emphasis on contemporary approaches to dance making and performance.
- Students must demonstrate writing and critical-thinking skills.
- Students must demonstrate comprehensive and theoretical understanding of the field.

Special requirements

An audition is required for acceptance into the dance program. Applicants must follow the admissions guidelines for arts students as described in the "Admission to the university" section of the bulletin.

The two-year trainee program of the Richmond Ballet provides intensive study and opportunities to perform in concert with the Richmond Ballet Company. Within this concentration, Richmond Ballet trainees enroll as full-time VCU dance majors when they enroll in the Richmond Ballet Trainee Program. Students must pass auditions for both programs and meet VCU academic requirements for admission.

Students in the performance/Richmond Ballet concentration must pay tuition for both the VCU and the Richmond Ballet Trainee programs.

Technique proficiency standard

All dance majors in the Richmond Ballet Trainee BFA must complete ballet technique to the level DANC 412 and modern technique to the DANC 302 level (or an equivalent approved by the chair and full-time faculty) to be eligible for graduation.

Senior project

In order to graduate, students must also complete DANC 490, which is a practical presentation in performance. A review committee, composed of full-time faculty members, approves senior projects in multiple stages. Eligibility is based on the student's overall academic record (credits earned, requirements met). Approval in stage one is based on the quality of the student's written proposal; in stage two it is based upon evaluation/review of the student's completed project proposed for presentation.

Degree requirements for Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
DANC 103 & DANC 104	Survey of Dance History and Survey of Dance History	6
DANC 105	Improvisation	2
DANC 201 & DANC 202	Modern Dance Technique II and Workshop and Modern Dance Technique II and Workshop	6
DANC 260	Dance Production Workshop	2

DANC 301 & DANC 302	Modern Dance Technique III and Workshop and Modern Dance Technique III and Workshop	6
DANC 317	Anatomy for the Dancer	1
DANC 318	Dance Science	3
DANC 407	Teaching Methods for Dance	3
DANC 490	Senior Project	3
• Additional major requirements		
DANC 293 & DANC 294	Professional Performance: Trainee Level First Year and Professional Performance: Trainee Level First Year	14
DANC 307	Music and Dance Forms for Trainees	2
DANC 313 or DANC 413 or DANC 415	Dance in World Cultures African American Presence in American Dance, Performance and Social Contexts Black Performance Theory	3
DANC 393 & DANC 394	Professional Performance: Trainee Level Second Year and Professional Performance: Trainee Level Second Year	16
DANC 405	Composition for Trainees	3
DANC 406	Composition for Trainees	3
Ballet technique		12
DANC 311 & DANZ 311	Ballet Technique III and Ballet Technique III Laboratory	
DANC 312 & DANZ 312	Ballet Technique III and Ballet Technique III Laboratory	
DANC 411 & DANZ 411	Ballet Technique IV and Ballet Technique IV Laboratory	
DANC 412 & DANZ 412	Ballet Technique IV and Ballet Technique IV Laboratory	
Dance electives (select from list below)		5
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Recommended dance electives include:		
DANC/AFAM 121	Tap Technique I	2
DANC/AFAM 122	Tap Technique I	2
DANC 126 & DANC 127	African-Caribbean Dance I and African-Caribbean Dance I	4
DANC 141	Ballroom Dancing	1
DANC 142	Ballroom Dancing	1
DANC 191	West African Dance Techniques	2
DANC 213	Beginning/Intermediate Pointe	1
DANC 230	Dance in Hollywood	3
DANC 251	Jazz Technique II	2
DANC 253	Pilates	1-2
DANC 254	Yoga	1-3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2

DANC 261	Rehearsal and Performance	1-3
DANC 262	Rehearsal and Performance	1-3
DANC 315	Contact Improvisation	2
DANC 319	Screen Dance	3
DANC 321	Partnering	2
DANC 360	Lighting Design for Dance	3
DANC 361	Rehearsal and Performance	1-3
DANC 362	Rehearsal and Performance	1-3
DANC 371	Repertory	3
DANC 372	Repertory	3
DANC 455	Dance Criticism	2
DANC 460	Business of Dance	2

Approved topics courses

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
DANC 103	Survey of Dance History	3
DANC 105	Improvisation	2
DANC 293	Professional Performance: Trainee Level First Year	7
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
Term Hours:		15

Spring semester

DANC 104	Survey of Dance History	3
DANC 294	Professional Performance: Trainee Level First Year	7
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

Sophomore year

Fall semester		
DANC 393	Professional Performance: Trainee Level Second Year	8
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
General education course		3
Term Hours:		17

Spring semester

DANC 317	Anatomy for the Dancer	1
DANC 394	Professional Performance: Trainee Level Second Year	8
General education course		3

General education course	3	
Term Hours:		15

Junior year**Fall semester**

DANC 201	Modern Dance Technique II and Workshop	3
DANC 260	Dance Production Workshop	2
DANC 318	Dance Science	3
DANC 411	Ballet Technique IV	2
DANZ 411	Ballet Technique IV Laboratory	1
General education course		3
Term Hours:		14

Spring semester

DANC 202	Modern Dance Technique II and Workshop	3
DANC 307	Music and Dance Forms for Trainees	2
DANC 313	Dance in World Cultures	3
or	or African American Presence in	
DANC 413	American Dance, Performance and	
or	Social Contexts	
DANC 415	or Black Performance Theory	
DANC 412	Ballet Technique IV	2
DANZ 412	Ballet Technique IV Laboratory	1
Dance elective		2
General education course		3
Term Hours:		16

Senior year**Fall semester**

DANC 301	Modern Dance Technique III and Workshop	3
or	or Modern Dance Technique IV and	
DANC 401	Workshop	
DANC 405	Composition for Trainees	3
DANC 407	Teaching Methods for Dance	3
DANC 411	Ballet Technique IV	2
DANZ 411	Ballet Technique IV Laboratory	1
Dance elective		2
Term Hours:		14

Spring semester

DANC 302	Modern Dance Technique III and Workshop	3
or	or Modern Dance Technique IV and	
DANC 402	Workshop	
DANC 406	Composition for Trainees	3
DANC 412	Ballet Technique IV	3
& DANZ 412	and Ballet Technique IV Laboratory	
DANC 490	Senior Project	3
Dance elective		1
Term Hours:		13
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Dance and choreography, minor in

The dance and choreography minor is designed to be flexible and serve the interests of individual students. Students can begin accruing credit hours toward a dance and choreography minor at any time. Requests for the minor can be made only after the student has earned a minimum

of six credits in dance at VCU, with a minimum overall GPA of 2.0. Transfer credits are not accepted toward the minor. Minor requests are to be submitted to the dance and choreography academic adviser and approved by the department chair. The minor consists of a total of 18 credits, with a minimum of nine credits at the 300 level or higher. Students choosing this minor should expect that not all classes are offered each term. Also, most classes for the minor are designated "nonmajor," which generally means they are open to the university population and fill quickly.

No audition is required for the dance and choreography minor.

Course	Title	Hours
Dance technique		
Select eight to 10 credits from:		8-10
DANC 121	Tap Technique I	
DANC 122	Tap Technique I	
DANC 133	Introduction to Ballet Technique I	
DANC 134	Introduction to Ballet Technique II	
DANC 141	Ballroom Dancing	
DANC 142	Ballroom Dancing	
DANC 183	Introduction to Modern Dance Technique	
DANC 184	Introduction to Modern Dance Technique	
DANC 191	West African Dance Techniques	
DANC 221	Tap Technique II	
DANC 222	Tap Technique II	
DANC 253	Pilates	
DANC 254	Yoga	
DANC 255	Hip Hop Dance	
DANC 256	Hip Hop Dance	
Dance history/theory, creative and career-based course work		
Select eight to 10 credits from:		8-10
DANC 103	Survey of Dance History	
DANC 104	Survey of Dance History	
DANC 105	Improvisation	
DANC 106	Improvisation	
DANC 204	Introduction to Composition	
DANC 230	Dance in Hollywood	
DANC 305	Advanced Improvisation	
DANC 313	Dance in World Cultures	
DANC 315	Contact Improvisation	
DANC 319	Screen Dance	
DANC 360	Lighting Design for Dance	
DANC 365	Sound Design for Dance	
DANC 413	African American Presence in American Dance, Performance and Social Contexts	
DANC 415	Black Performance Theory	
DANC 455	Dance Criticism	
DANC 460	Business of Dance	
Approved topics courses may also fulfill this area.		
Total Hours		18

Department of Fashion Design and Merchandising

Deidra Arrington

Associate professor and chair

arts.vcu.edu/fashion (<http://arts.vcu.edu/fashion/>)

The Department of Fashion Design and Merchandising offers two programs. The fashion design concentration leads to a Bachelor of Fine Arts degree and the fashion merchandising concentration leads to a Bachelor of Arts degree.

Both concentrations are extremely time-consuming. Students are expected to put class attendance and study time above other campus activities or employment.

All students are required to have a laptop computer. The department can provide specifications.

Students must take classes in the sequence prescribed by the department and adhere to all prerequisites. Failure to comply can lengthen the number of semesters necessary for completion of degree requirements.

Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

- Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising (p. 403)
- Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design (p. 406)
- Fashion merchandising, minor in (p. 408)

Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising

The major in fashion merchandising requires a strong background in marketing, business and specialized professional courses with an emphasis on globalism. Students are directed toward assignments that will develop their skills in research, writing, presentation and critical thinking. Graduates find career opportunities in fashion forecasting, product development, advertising and promotion, retail management, buying, and international marketing.

Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

Study abroad programs are readily available for fashion merchandising majors.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Implement technical skills: The program will provide students with technical knowledge and skills of contemporary computer software.
2. Utilize problem-solving: Apply quantitative and qualitative skills to problem-solving within the apparel industry. Students will be familiar with the various levels of the fashion industry, and understand how

the different business levels and segments intersect. Students will have knowledge of numerous occupations in the fashion industry.

3. Understand the fashion industry and its occupations: Students will understand the workings of the wholesale segment of the fashion industry including market segmentation, buyer behavior and career opportunities. Numerous simulations and outside evaluators will be used.
4. Understand the wholesale industry: Students will understand how theoretical perspectives on markets, trade and economic development can be applied to historical and current data on production, consumption and trade.
5. Understand global economics: Students will understand how theoretical perspectives on markets, trade and economic development can be applied to historical and current data on production, consumption and trade.
6. Application of the design principles: Students will successfully apply the elements and principles of design to various fashion-related projects and presentations.
7. Knowledge of the theory of contemporary fashion: Students will be aware of the historical significance of fashion in contemporary history.
8. Application of merchandising math: Students will demonstrate understanding of the fashion buyer's job with regard to merchandise planning and control.

Degree requirements for Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FASH 120	Introduction to the Fashion Industry	3
FASH 145	Computers for Fashion I	3
FASH 250	Concepts of Fashion Merchandising Environment	3
FASH 290	Textiles for the Fashion Industry	3
FASH 319	Contemporary Fashion	3
FASH 340	Portfolio Development	3
FASH 341	Merchandise Planning and Control	3
FASH 342	Retail Buying Simulation	3
FASH 343	Fashion Forecasting	3
FASH 380	Fashion Branding	3
FASH 443	Supervision and Management	3
FASH 445	Fashion Entrepreneurship	3
FASH 451	Importing and Exporting Fashion	3
• Additional major requirements		
FASH 440 or FASH 450	Line Development Studio Line Development	3
• Major electives		
Select from any FASH course not otherwise required for degree.		3

Ancillary requirements		
ACCT 202	Accounting for Non-business Majors	3
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
BUSN 323	Legal Environment of Business	3
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Design history elective		
FASH 320 or THEA 309 or THEA 310	Twenty-first Century Fashion History of Costumes History of Costumes	3
Marketing courses		15
MKTG 301	Marketing Principles	
Select 12 additional credits in MKTG		
Open electives		
Select any course.		14
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Note: Internships are not required but are strongly recommended. FASH 493 may range from one to six credits.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
ARTH 103	Survey of Art I	3
FASH 120	Introduction to the Fashion Industry	3
FASH 145	Computers for Fashion I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		15
Spring semester		
ARTH 104	Survey of Art II	3
FASH 250	Concepts of Fashion Merchandising Environment	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
General education course		3
Term Hours:		15
Sophomore year		
Fall semester		
ACCT 202	Accounting for Non-business Majors	3
FASH 290	Textiles for the Fashion Industry	3
Design history elective or FASH 320		3
General education course		3

Open elective		3
Term Hours:		15
Spring semester		
INFO 162	Digital Literacy: Spreadsheets Skills I	1
FASH 343	Fashion Forecasting	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
General education course		3
Open elective		2
Term Hours:		15
Junior year		
Fall semester		
FASH 319	Contemporary Fashion	3
FASH 341	Merchandise Planning and Control	3
FASH 380	Fashion Branding	3
MKTG 301	Marketing Principles	3
Fashion elective		3
Term Hours:		15
Spring semester		
BUSN 323	Legal Environment of Business	3
FASH 340	Portfolio Development	3
FASH 342	Retail Buying Simulation	3
General education course		3
Marketing elective (MKTG)		3
Term Hours:		15
Senior year		
Fall semester		
FASH 443	Supervision and Management	3
FASH 450	Line Development	3
or	or Line Development Studio	
FASH 440		
Marketing elective (MKTG)		6
Open elective		3
Term Hours:		15
Spring semester		
FASH 445	Fashion Entrepreneurship (capstone)	3
FASH 451	Importing and Exporting Fashion	3
Marketing elective (MKTG)		3
Open electives		6
Term Hours:		15
Total Hours:		120

Note: Internships are not required but are strongly recommended. FASH 493 may range from one to six credits.

The minimum number of credit hours required for this degree is 120.

Accelerated B.A. and M.S.

The accelerated B.A. and M.S. program allows qualified students to earn both the B.A. in Fashion with a concentration in fashion merchandising and M.S. in Business with a concentration in marketing management in a minimum of five years by completing up to 12 credit hours of approved graduate courses during the senior year of their undergraduate program.

Students in the program may count up to three credit hours of graduate courses toward both the B.A. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 147 credits rather than the 150 credits necessary if the two degrees are pursued separately.

In their senior year students would also take up to nine credit hours of graduate-level foundations courses, which are prerequisites for the graduate program.

Students holding these degrees will be very competitive due to the combined knowledge and skills in marketing, culture and business and will be well prepared for success in an increasingly global marketplace.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours and an overall GPA of 3.25. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study.

Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below.

The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Applications must be received no later than Nov. 1 for spring semester admission and no later than July 1 for fall semester admission. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Two reference letters (at least one from a School of Arts faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the M.S. in Business with a concentration in marketing management program before they have completed 90 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate School of the Arts adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Arts in Fashion degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. Three of these credits, MKTG 672, are shared with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate business courses that may be taken as an undergraduate once a student is admitted to the program – and how they apply – are shown in the table below.

Course	Title	Hours
ACCT 507	Fundamentals of Accounting (graduate foundation; satisfies ACCT 202 or open elective in undergraduate program)	3
MKTG 672	Influencing Consumer Behavior (shared between undergraduate and graduate programs)	3
FIRE 520	Financial Concepts of Management (graduate foundation; satisfies open elective in undergraduate program)	3
SCMA 524	Statistical Fundamentals for Business Management (graduate foundation; satisfies open elective in undergraduate program)	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
FASH 319	Contemporary Fashion	3
FASH 341	Merchandise Planning and Control	3
FASH 380	Fashion Branding	3
MKTG 301	Marketing Principles	3
Fashion elective		3
Term Hours:		15
Spring semester		
BUSN 323	Legal Environment of Business	3
FASH 340	Portfolio Development	3
FASH 342	Retail Buying Simulation	3
Elective (MKTG)		3
General education course		3
Term Hours:		15
Senior year		
Fall semester		
ACCT 507	Fundamentals of Accounting	3
FASH 443	Supervision and Management	3
FASH 450 or FASH 440	Line Development Line Development Studio	3
SCMA 524	Statistical Fundamentals for Business Management	3
Elective (MKTG)		3
Term Hours:		15
Spring semester		
FASH 445	Fashion Entrepreneurship	3
FASH 451	Importing and Exporting Fashion	3
FIRE 520	Financial Concepts of Management	3
MKTG 672	Influencing Consumer Behavior	3

Elective (MKTG)		3
Term Hours:		15
Fifth year		
Summer semester		
MKTG 671	Marketing Management	3
Fall semester		
MKTG 675	Digital Marketing	3
MKTG 679	Brand Strategy	3
Electives		6
Term Hours:		12
Spring semester		
MKTG 657	Market Planning Project	3
Electives		9
Term Hours:		12

Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design

The fashion design curriculum offers technical and design courses that provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. Junior design students are encouraged to complete internships in the fashion industry in New York City. Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

Study abroad programs are readily available for fashion design majors.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Utilize problem-solving skills: Apply investigative and research skills in the completion of studio projects
2. Implement industry-standard computer technology
3. Demonstrate professional visual and oral presentation skills
4. Understand the global nature of the fashion industry

Special requirements

Sophomores are required to purchase departmentally approved dress forms.

Degree requirements for Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FASH 201	Construction Techniques	3

FASH 203 & FASH 204	Patternmaking I and Patternmaking II	6
FASH 205 & FASH 206	Fashion Drawing I and Fashion Drawing II	6
FASH 290	Textiles for the Fashion Industry	3
FASH 301	Design I Studio: Draping (taken twice)	6
FASH 302	Design I Studio: Tailoring (taken twice)	6
FASH 303	Design Theory and Illustration I	3
FASH 304	Design Theory and Illustration II	3
FASH 319	Contemporary Fashion	3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
FASH 404	Portfolio	4
• Additional major requirements		
Studio courses (select 12 credits)		12
FASH 401	Design II Studio ¹	
FASH 402	Design II Studio ¹	
FASH 405	Middle of Broad Studio	
FASH 440	Line Development Studio	
FASH 491	Studio Topics in Design	
Ancillary requirements		
• Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
• Additional requirements		
FASH 320 or THEA 309 or THEA 310	Twenty-first Century Fashion History of Costumes History of Costumes	3
Electives		
Select any course at the 200 level or higher		3
Select any courses at the 300 level or higher		6
Total Hours		120

1

Students may repeat FASH 401 or FASH 402 for six credits each.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
ARTF 131 Drawing Studio	3
ARTF 132 Surface Research	3
ARTF 139 Project Studio or or Project Seminar ARTF 138	1

ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

Sophomore year

Fall semester

FASH 201	Construction Techniques	3
FASH 203	Patternmaking I	3
FASH 205	Fashion Drawing I	3
FASH 290	Textiles for the Fashion Industry	3
General education course		3
Term Hours:		15

Spring semester

FASH 204	Patternmaking II	3
FASH 206	Fashion Drawing II	3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Elective (200 level or higher)		3
Term Hours:		15

Junior year

Fall semester

FASH 301	Design I Studio: Draping	3
FASH 302	Design I Studio: Tailoring	3
FASH 303	Design Theory and Illustration I	3
FASH 319	Contemporary Fashion	3
General education course		3
Term Hours:		15

Spring semester

FASH 301	Design I Studio: Draping	3
FASH 302	Design I Studio: Tailoring	3
FASH 304	Design Theory and Illustration II	3
General education courses		6
Term Hours:		15

Senior year

Fall semester

FASH 320 or THEA 309 or THEA 310	Twenty-first Century Fashion or History of Costumes or History of Costumes	3
FASH 401	Design II Studio	3
FASH 402 or FASH 405	Design II Studio or Middle of Broad Studio	3
FASH 404	Portfolio	4
Elective (300 level or higher)		3
Term Hours:		16

Spring semester

FASH 401	Design II Studio	3
FASH 402 or FASH 405	Design II Studio or Middle of Broad Studio	3
Elective (300 level or higher)		3
General education course		3
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Fashion merchandising, minor in

Students from any department in the university may request enrollment in the fashion merchandising minor provided they have a minimum GPA of 3.0. The minor consists of 18 credits, nine of which must be at the 300-400 level. Students in the Bachelor of Arts in Fashion with a concentration in fashion merchandising program are not eligible for this minor.

Course	Title	Hours
Required courses (must be completed before progressing to electives)		
FASH 120	Introduction to the Fashion Industry	3
FASH 341	Merchandise Planning and Control	3
Electives		
Select 12 additional credits from:		12
FASH 250	Concepts of Fashion Merchandising Environment	
FASH 290	Textiles for the Fashion Industry	
FASH 319	Contemporary Fashion	
FASH 325	Fashion and Sustainability	
FASH 342	Retail Buying Simulation	
FASH 343	Fashion Forecasting	
FASH 350	Fashion Promotion	
FASH 360	Merchandising Luxury Fashion	
FASH 380	Fashion Branding	
FASH 391	Fashion Workshop	
FASH 440	Line Development Studio	
FASH 443	Supervision and Management	
FASH 450	Line Development	

Total Hours**18**

Department of Graphic Design

arts.vcu.edu/graphicdesign (<http://arts.vcu.edu/graphicdesign/>)

The Department of Graphic Design champions agency through the competencies of collaboration, research, making and cultural literacy. The department believes in responding to the reality of our time and that design is activated by content, condition and impact. Further, that design exists in a continuum: The study of the historical past as it informs the now strengthens design's ability to strategically speculate on future forms, languages and systems.

The department provides an education that values the inclusion of diverse backgrounds, skill sets and experiences. Students develop acuties to communicate effectively through visual and verbal representation, and are prepared — as individuals and collaborators — to be practitioners not limited by the confines of current professional practices.

- Graphic Design, Bachelor of Fine Arts (B.F.A.) (p. 408)

Graphic Design, Bachelor of Fine Arts (B.F.A.)

The sophomore year in the graphic design program is focused on orientation to, and experimentation within, design practice. Students develop processes of making, meaning-building and critical engagement with ideas related to form, medium, materials and tools. This year provides a critical framework to develop a vocabulary allowing them to begin to discuss ideas around information hierarchies and meaning-making as well as legibility and translation.

The junior year is focused on experimentation with, and construction of, narrative structures, argument, advocacy and rhetoric (text, text and image, sequence). The underlying social, political and pluralistic demands of graphic design are emphasized. It situates the student and their work/practice within a context and community and introduces methods to facilitate collaboration with those directly and indirectly impacted by the end results of the design process

The senior year is focused on deepening, refining and situating individuated experiences; formulating and synthesizing learning by teaching others through participatory engagement; and building a situated design practice, while understanding that design is inseparable from the culture at large. The student experience in the program culminates in a capstone project that demonstrates their readiness and capacity to engage responsibly and creatively in the field and is presented in a public exhibition.

Admission

Students who have successfully completed the Art Foundation Program are eligible to apply for admission to the B.F.A. program in the Department of Graphic Design.

Students who wish to transfer into the graphic design program must first apply to the Art Foundation Program for evaluation. A transfer student must demonstrate equivalent preparation at other institutions and submit a portfolio of work for review by graphic design faculty. Transfer students admitted into the graphic design program must complete all

major requirements determined to be missing from their academic design experience. Transfer students should expect to spend a minimum of five semesters in the graphic design program in order to qualify for a B.F.A.

Due to the sequence of the required graphic design courses, students are admitted only for the fall semester.

Standards of graphic design

Students must complete the required pre- and corequisites of the graphic design program in the order presented in the curriculum outline. This structure enables students to develop knowledge and skills based in graphic design that will prepare them for upper-level studio courses and successful entry into the graphic design profession.

Students must earn a minimum cumulative GPA of 2.5 to be accepted to the graphic design program. Once accepted, students must maintain a minimum 2.5 GPA in GDES courses to continue in the program.

Students are required to meet regularly with the department undergraduate academic adviser each semester on scheduled advising dates to make sure they are completing courses as required.

A portfolio review of graphic design course work takes place at the end of the third semester. The student's portfolio, presentation, GPA and individual course assessments are evaluated holistically during this review to determine if the student may continue in the program. Additionally, the following courses must be successfully completed by the end of the third semester to be eligible for participation in the review:

Course	Title	Hours
GDES 220	Design Practices	4
GDES 221	Core Studio I	4
GDES 231	Theory Inquiry	3
GDES 222	Core Studio II	4
GDES 321	Core Studio III	4
GDES 331	Precedents Inquiry	3
GDES 380	Multi Studio I	4
GDES 398	Dialogues	1

GDES elective (300-500 level)

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Prioritize making as a primary mode of investigation and exchange:** Students will engage with labor as a physical and emotional activity that is fundamental to the design process. They will understand and practice design as a process that is not driven by assumptions, presumptions or preconceptions.
- **Understand that research is an essential component of the design process:** Students will employ research as a critical lens to understand context and to validate the relevance of design decisions and processes.
- **Develop capacity to design in collaboration with others:** Students will become equipped to participate in broad and diverse exchanges that expand the range and depth of design processes that are oriented to nonhierarchical learning and making.
- **Develop cultural literacy:** Students will be cognizant of forces that affect the formation and reinforcement of meaning and value.

These forces define who we are and how the decisions we make can cultivate the dignity of individuals and communities.

Special requirements

Once accepted, students must maintain a minimum 2.5 GPA in GDES courses to continue in the program. Student GDES course work GPA is monitored at the end of fall and spring semesters. A student with GDES course work GPA that falls below 2.5 by the end of any semester is placed on departmental probation for the next semester. Students placed on GDES GPA probation must bring their GDES course work GPA to a minimum of 2.5 by the end of the following semester. Students failing to bring their GDES course work GPA to a minimum of 2.5 by the end of that semester are no longer permitted to continue in the program.

Degree requirements for Bachelor of Fine Arts, Graphic Design (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
GDES 220	Design Practices	4
GDES 221	Core Studio I	4
GDES 222	Core Studio II	4
GDES 231	Theory Inquiry	3
GDES 321	Core Studio III	4
GDES 322	Core Studio IV	4
GDES 331	Precedents Inquiry	3
GDES 380	Multi Studio I (taken twice)	8
GDES 398	Dialogues (taken six semesters)	6
GDES 431	Critical Inquiry	4
GDES 440	Synthesis	6
GDES 480	Multi Studio II	2
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
GDES electives (300 to 500 level)		8
Open electives		
Select any course.		12
Total Hours		122

The minimum number of credit hours required for this degree is 122.

Electives

Course	Title	Hours
GDES 301	Letterpress	4
GDES 302	Book Arts	4
GDES 308	Web Design	4
GDES 356	Studio Management	4
GDES 391	Lecture Topics in Design	1-4
GDES 392	Research/Individual Study	1-4
GDES 401	Experimental Letterpress	4
GDES 403	Design Activism	4
GDES 404	Typeface Design	4
GDES 408	Advanced Web Design	3
GDES 412	Typographic Systems	4
GDES 413	Package Design	4
GDES 414	Exhibition and Environmental Graphic Design	4
GDES 417	Interdisciplinary Team Design	3
GDES 418	Design Center	3-9
GDES 445	Problem Seeking	3
GDES 481	Practicum	4
GDES 491	Studio Topics in Design	1-6
GDES 492	Design Internship	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course		
video for		
Focused		
Inquiry I		
General education course		3
Term Hours:		16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course		
video for		
Focused		
Inquiry II		

General education course	3
Term Hours:	16

Sophomore year**Fall semester**

GDES 220	Design Practices	4
GDES 221	Core Studio I	4
GDES 231	Theory Inquiry	3
GDES 398	Dialogues	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours:	15
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Spring semester

GDES 222	Core Studio II	4
GDES 380	Multi Studio I	4
GDES 398	Dialogues	1
General education course		3
Open elective		3

Term Hours:	15
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Junior year**Fall semester**

GDES 321	Core Studio III	4
GDES 331	Precedents Inquiry	3
GDES 398	Dialogues	1
GDES elective		4
General education course		3

Term Hours:	15
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Spring semester

GDES 322	Core Studio IV	4
GDES 380	Multi Studio I	4
GDES 398	Dialogues	1
General education course		3
Open elective		3

Term Hours:	15
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Senior year**Fall semester**

GDES 398	Dialogues	1
GDES 431	Critical Inquiry	4
GDES elective		4
General education course		3
Open elective		3

Term Hours:	15
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Spring semester

GDES 398	Dialogues	1
GDES 440	Synthesis	6
GDES 480	Multi Studio II	2
General education course		3
Open elective		3

Term Hours:	15
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Total Hours:	122
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The minimum number of credit hours required for this degree is 122.

Department of Interior Design

Roberto Ventura

Associate professor and chair

arts.vcu.edu/interiordesign (<http://arts.vcu.edu/interiordesign/>)

The Department of Interior Design is accredited by the Council for Interior Design Accreditation. The mission of the department is to provide an intellectually rigorous, studio-based experience grounded in the issues of interior architecture. The department develops in its students an enduring passion and curiosity for their work, a determination to continually seek quality in their endeavors, an ability to reflect constructively upon their actions as individuals and a responsibility for their lifelong education. The department focuses students' professional activities while encouraging connections between these activities and the larger forum of ideas that enrich their culture and environment. The Bachelor of Fine Arts in Interior Design program prepares students for careers in interior design or entry into programs of advanced study.

The department also offers a Master of Fine Arts in Design with a concentration in interior environments with a professional entry-level option and a post-professional option. These tracks seek to produce competent creative designers whose design solutions are based on human response in the contemporary environment. Mastery of design skills, development of productive habits, knowledge of resources and an awareness of interrelated disciplines equip the student with the tools and expertise necessary to pursue creative design positions.

The department relates with the professional interior design community through a variety of activities. The faculty invites featured speakers to share experiences, participate in the annual ASID EXPO, facilitate mentorships with professional designers and support student internships. An active student chapter of the American Society of Interior Designers provides additional enriching opportunities for student involvement.

The department offers limited accelerated undergraduate preparation for those individuals who lack full preparation. Assessment of the individual candidate's needs will determine the scope of the preparatory course work. This is an opportunity to gain the skills and design experiences required to qualify for admission to the graduate degree program.

The department has a very comprehensive website with extensive information about the program, interior design in general, faculty, student work and the department newsletter. In advance of scheduling a meeting for department advising or for application to the program, students should review the department website (<https://arts.vcu.edu/academics/departments/interior-design/>).

- Interior Design, Bachelor of Fine Arts (B.F.A.) (p. 411)

Interior Design, Bachelor of Fine Arts (B.F.A.)

The Department of Interior Design, accredited by the Council for Interior Design Accreditation, provides the breadth of a university education with the depth of a professional curriculum. The curriculum provides for the study of space, form, color and light in collaboration with the pragmatic investigation of building codes, materials, finishes, construction methods and business practices. An important focus also is placed on the study of design theory and the history of interior environments. All of these areas are synthesized in the curriculum to provide learning of the overall

context of the built interior environment. Graduates are prepared with the skills and knowledge that can facilitate the student's transition into an entry-level interior design position at a successful firm or corporation, or entry into programs of advanced study. The department also prepares students with the skills and knowledge that will allow for lifelong learning and professional development in the design industry. Prospective students are encouraged to review the School of the Arts undergraduate admissions website as well as the Art Foundation Program website.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

1. Students will demonstrate professional values. The students will demonstrate professional values that address client and user needs in response to the built environment, professional ethics, environmental ethics and the role of sustainability in the practice of interior design. Students will demonstrate an understanding of a global perspective approach to thinking and problem-solving (viewing design with awareness and respect for cultural and social differences of people; understanding issues that affect the sustainability of the planet; understanding of the implications of conducting the practice of design within a world market). Students will demonstrate critical and analytical thinking, creative thinking, and the ability to think visually and volumetrically. Students will demonstrate professional discipline (i.e., time management, organizational skills) and active listening skills. Students will understand the importance of community, public service and engagement.
2. Student work will demonstrate design fundamentals. Students will demonstrate knowledge of design fundamentals including design elements and principles, color principles, theories and systems, theories of design and composition, and principles and theories of lighting design. Students will demonstrate an understanding of the theories of human behavior in the built environment including human factors (ergonomics, anthropometrics), the relationship between human behavior and the built environment, and an understanding of the principles of sustainability. Students will demonstrate knowledge of the history of art, architecture and design. Students will demonstrate knowledge on public safety issues and awareness of code regulations as they relate to planning interior spaces.
3. Student work will demonstrate knowledge of interior design. Students will demonstrate knowledge and application of the following: design process; design elements and principles; programming skills; competent schematic design and conceptual development; design development skills; skills in preparing drawings, schedules and specifications; understanding of how design solutions are impacted by codes, building systems and interior furnishing materials; and understanding of the impact of laws, codes, regulations, standards and practices that protect the health, safety and welfare of the public.
4. Student work will demonstrate effective communication. Students must express ideas clearly in a variety of methods. Completed design work will be presented verbally and through a series of drawings, models and other physical or digital media. Growth of presentation methods will be evident as students progress in their course work.

Standards of interior design

1. Students who have successfully completed the Art Foundation Program may enter the program in the fall semester only. All applicants must submit a portfolio of work. The department uses the portfolio evaluation criteria established in the School of the Arts for

initial acceptance. A second portfolio review of interior design studio work takes place at the end of the sophomore year. The faculty uses the portfolio as an advising tool to determine student placement in the program. The student's GPA also is evaluated to determine if the student may continue in the program. The following courses must be completed at the end of the sophomore year to be eligible for continuation in the program:

Course	Title	Hours
IDES 201	Introductory Interior Design Studio I	4
IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 311	Advanced Interior Graphics I	3

- Students who wish to transfer into the interior design program must first apply to the Art Foundation Program for evaluation. A student must demonstrate equivalent preparation at other institutions and submit a portfolio of work for review by interior design faculty. Transfer students admitted into the program must complete all major requirements determined to be missing from their academic design experience.
- Students must complete the required pre- and corequisites of the program in the order presented in the curriculum outline. This structure enables students to develop knowledge and skill bases in interior design that will prepare them for upper-level interior design studio courses (IDES 301, IDES 302, IDES 400 and IDES 401) and successful entry into the interior design profession.
- Students must earn a minimum 2.5 GPA on all work before entering the program, in the semester immediately before entering the major and each semester they continue in the program. Students must maintain a minimum grade of C in each studio in order to continue to the next semester of studio courses.
- Students are required to have a laptop computer and appropriate software upon entry into the interior design program. The department recommends a specific computer package that is used throughout the academic year. The package is updated each year because of changes in computer technology. The total cost is approximately \$3,800 and financial aid is available to those who qualify. An interior design student kit also is required upon initial entry into the program; it contains a variety of drawing supplies for graphics and interior design studios. Students will receive the computer requirements and student kit requirements upon acceptance into the program.
- Students with experience in interior design or related fields may challenge some interior design courses based on regulations for "Undergraduate credit by examination (p. 38)" as stated in this bulletin. Students must be accepted into the interior design program and challenges are based upon demonstrated experience, portfolio work and professional years of experience. No more than nine credit hours may be challenged and the challenge may not be requested during the final semester before graduation. Courses that may be challenged include:

Course	Title	Hours
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3

IDES 231	Fundamentals of Interior Design	3
IDES 321	Interior Materials and Textiles	3
IDES 324	Furniture Design	3
IDES 431	ID Business Practices	3

- A student majoring in interior design who does not enroll in courses in the major as a full-time student for three or more consecutive semesters (including summer) must reapply to the program, submitting a portfolio and undergoing a grade review.

Special requirements

- Students may enter the Interior Design program in the fall semester only.
- Students must earn at a minimum 2.5 GPA on all work before entering the program, in the semester immediately before entering the major and each semester they continue in the program.

Degree requirements for Interior Design, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
IDES 201	Introductory Interior Design Studio I	4
IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 301	Interior Design Studio I	4
IDES 302	Interior Design Studio II	4
IDES 311	Advanced Interior Graphics I	3
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3
IDES 323	Light and Color in Interior Environments	3
IDES 400	Senior Interior Design Studio I	4
IDES 401	Senior Interior Design Studio II	4
IDES 422	Building Systems	3
IDES 431	ID Business Practices	3
IDES 441	Senior Design Seminar I	2
IDES 442	Senior Design Seminar II	2
IDES 493	Interior Design Internship	3
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2

or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
	Art/design elective (300 to 400 level)	3
	Art/design elective (any)	3
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 103	Survey of Art I	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		16

Spring semester		Hours
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 104	Survey of Art II	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		16

Sophomore year

Fall semester		Hours
IDES 201	Introductory Interior Design Studio I	4
IDES 211	Interior Graphics I	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		16

Spring semester

IDES 202	Introductory Interior Design Studio II	4
IDES 212	Interior Graphics II	3

IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 311	Advanced Interior Graphics I	3
General education course		3
Term Hours:		16

Junior year

Fall semester		Hours
IDES 301	Interior Design Studio I	4
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3
IDES 323	Light and Color in Interior Environments	3
General education course		3
Term Hours:		16

Spring semester

IDES 302	Interior Design Studio II	4
IDES 422	Building Systems	3
IDES 431	ID Business Practices	3
General education course		3
Term Hours:		13

Senior year

Fall semester		Hours
IDES 400	Senior Interior Design Studio I	4
IDES 441	Senior Design Seminar I (capstone)	2
IDES 493	Interior Design Internship	3
	Art/design elective	3
General education course		3
Term Hours:		15

Spring semester		Hours
IDES 401	Senior Interior Design Studio II (capstone)	4
IDES 442	Senior Design Seminar II (capstone)	2
	Art/design elective (300 to 400 level)	3
General education course		3
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Department of Kinetic Imaging

Stephen Vitiello

Professor and chair

[arts.vcu.edu/kineticimaging/](http://www.arts.vcu.edu/kineticimaging/) (<http://www.arts.vcu.edu/kineticimaging/>)

The Department of Kinetic Imaging prepares students to use video, animation and sound for the purpose of art-making, self-expression and experimentation. The kinetic imaging programs are designed for students who want to study video art, sound design and experimental two-dimensional and three-dimensional animation. Emphasis is placed on artistic uses of the media.

The department offers an undergraduate curriculum leading to a Bachelor of Fine Arts in Kinetic Imaging as well as a graduate level program that results in a Master of Fine Arts in Fine Arts.

- Kinetic Imaging, Bachelor of Fine Arts (B.F.A.) (p. 414)

- Sound design, minor in (p. 415)

Kinetic Imaging, Bachelor of Fine Arts (B.F.A.)

The Department of Kinetic Imaging prepares students to use video, animation and sound for the purpose of art-making, self-expression and experimentation. The program is designed for students who want to study video art, sound design and experimental two- and three-dimensional animation. Emphasis is placed on artistic uses of the media.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will demonstrate the ability to create media art that is conceptually grounded and evidences individual reflection and critical inquiry.
- Students will be able to make appropriate choices of media and presentation to support the conceptual intent of their work.
- Students will demonstrate the ability to construct meaning, synthesize ideas, ask pertinent questions and identify resources. Students will be able to successfully bring critical analysis and review to collaborative critique sessions and also to written responses.
- Students will demonstrate an advanced level of skills in their use of technology and tools for the production of video, animation, sound and emerging media. This includes a wide range of technology in regards to both equipment and software.

Degree requirements for Kinetic Imaging, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
KINE 233	Media Arts Survey	3
KINE 243	Video Practices	4
KINE 245	Animation Practices	4
KINE 247	Sound Art	4
KINE 348	3D Computer Art	4
KINE 354	Creative Code and Electronics	4
KINE 357	Critical Issues in the Media	3
KINE 375	Concept and Development Studio	4
KINE 474 & KINE 475	Research and Production I and Research and Production II	8
• Major electives		
Emphasis area electives (300 level or above) ¹		22
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Open electives		
Select any course.		10
Total Hours		120

1

Select courses in KINE or any School of the Arts area (except art education) or approved ENGL (creative writing) or WRLD (world cinema) that are applicable to an individual's major course of study through adviser consultation. See electives list below.

The minimum number of credit hours required for this degree is 120.

Electives

Emphasis area electives must be 300- to 400-level and include courses in the table below.

Course	Title	Hours
KINE 319	Screen Dance	3
KINE 343	Video Concepts	4
KINE 345	Animation Concepts	4
KINE 346	Survey of Sound Design	3
KINE 347	Sound Design	4
KINE 392	Research/Individual Study	1-4
KINE 443	Topics in Video Art	4
KINE 445	Topics in Animation	4
KINE 447	Topics in Sound	4
KINE 448	3D Computer Animation	4
KINE 454	Live Coding	4
KINE 455	Motion Graphics	4
KINE 457	Socially Engaged Media	4
KINE 458	Virtual Interactive Worlds	4
KINE 460	Wearable Technologies	4
KINE 492	Internship	1-3
KINE 491	Studio Topics	1-4
ARTH, ARTS, CINE, COAR, CRAF, CREA, DANC, GDES, FASH, IDES, MHIS, MUSC, PAPP, PHTO, SCPT, THEA		
Select a maximum of six credits from the following:		6
ENGL 303	Writing for Stage and/or Screen	
ENGL 305	Writing Poetry	
ENGL 307	Writing Fiction	
ENGL 309	Writing Creative Nonfiction	
ENGL 435	Advanced Poetry Writing	
ENGL 437	Advanced Fiction Writing	
ENGL 439	Advanced Creative Nonfiction Writing	
ENGL 491	Topics in Writing	
WRLD 330	Introduction to Film Studies	
WRLD 359	International Media Coverage: The Middle East	

WRLD 422	National Cinema	
WRLD 430	Film and the City	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project Studio	1
	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course	3
Term Hours:		16

Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course	3
Term Hours:		16

Sophomore year

Fall semester

KINE 233	Media Arts Survey	3
	Select two of the following:	8
KINE 243	Video Practices	-
KINE 245	Animation Practices	-
KINE 247	Sound Art	-
KINE 348	3D Computer Art	-
KINE 354	Creative Code and Electronics	-
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		14

Spring semester

	Select the remaining three of the following:	12
KINE 243	Video Practices	-
KINE 245	Animation Practices	-
KINE 247	Sound Art	-
KINE 348	3D Computer Art	-
KINE 354	Creative Code and Electronics	-

General education course	3
Term Hours:	15

Junior year

Fall semester

KINE 357	Critical Issues in the Media	3
	Emphasis area electives	4
	Emphasis area electives	4
	General education course	3
	Open elective	1
Term Hours:		15

Spring semester

KINE 375	Concept and Development Studio	4
	Emphasis area electives	4
	Emphasis area electives	1
	General education course	3
	Open elective	3
Term Hours:		15

Senior year

Fall semester

KINE 474	Research and Production I	4
	Emphasis area electives	4
	Emphasis area electives	1
	General education course	3
	Open elective	3
Term Hours:		15

Spring semester

KINE 475	Research and Production II	4
	Emphasis area electives	4
	General education course	3
	Open elective	3
Term Hours:		14
Total Hours:		120

Central Authentication Service

The minimum number of credit hours required for this degree is 120.

Sound design, minor in

Any VCU student may apply for a minor in sound design and acceptance is based on an application review. The minor requires a minimum of 18 credits in the following courses, of which a minimum of nine credits must be at the 300 or 400 level.

Course	Title	Hours
Required courses		
THEA 333	Sound Technology	3
KINE 346	Survey of Sound Design	3
Electives		
Select 12 credits from:		12
CINE 120	Integrating Sight and Sound	
DANC 365	Sound Design for Dance	
KINE 247	Sound Art	
KINE 347	Sound Design	

KINE 447	Topics in Sound
MHIS 115	Fundamental Musicianship
PHTO 361	Sound and Color
PHYS/MHIS 307	The Physics of Sound and Music
THEA 326	Audio Mixing
THEA 334	Sound Design for Theatre
THEA 351	Rehearsal and Performance
Total Hours	18

Department of Music

arts.vcu.edu/music (<http://arts.vcu.edu/music/>)

VCU Music: Educating musicians to shape the stage, the classroom and the world

The Department of Music is committed to the advancement of Western art music and jazz as academic disciplines, as fields of professional endeavor and as significant expressions of culture. Entrance and graduation requirements comply with the National Association of Schools of Music guidelines. The department offers degree programs at the baccalaureate and master's levels, and each of them is described in detail on individual program pages within the Bulletins website. Students in the VCU Music community are involved in a musically rich environment of studio lessons, small classes, independent study and performances. They hear outstanding professional performers in the classical and jazz traditions and attend on-campus master classes with major touring artists. Student soloists also may appear with regional and university ensembles. Through the Mary Anne Rennolds Chamber Concert Series and other events, the department is one of the region's major sponsors of music performances. Approximately 250 students choose to major in music, with many other students from throughout the university taking courses and participating in ensembles. There are 26 full-time faculty, more than half of whom hold doctorates, in addition to 45 part-time instructors. Among the faculty are internationally recognized performers, composers, researchers and teachers – musician-educators who are active in all facets of the professional music world. The faculty includes members and regular performers with ensembles that include the Richmond and Virginia symphonies, the New York Philharmonic, the Virginia Opera, Rhythm and Brass, and the Atlantic Chamber Ensemble. The faculty maintains a high level of recognition through each individual's publications, recordings, international performances and lectures. The department is housed in two buildings. The principal facility is the W.E. Singleton Center for the Performing Arts, which includes the 502-seat Sonia Vlahcevic Concert Hall, faculty offices, rehearsal rooms and special studios for organ, percussion and piano. The James W. Black Music Center has a 347-seat recital hall, classrooms, practice rooms, rehearsal spaces, faculty offices and studios.

Admission and auditions

An audition and interview are necessary for admission to programs in the Department of Music. Students must also meet the general admission requirements of the university. For audition information contact Virginia Commonwealth University, Department of Music, 922 Park Ave., Box 842004, Richmond, VA 23284-2004; phone (804) 828-1169 or email apply4music@vcu.edu.

Music education candidacy

In order to achieve candidacy, music education majors must maintain a minimum cumulative GPA of 2.8 and must demonstrate satisfactory

completion of the Praxis I, ACT or SAT. Music education students who do not achieve candidacy will not be allowed to continue in the music education program, but may continue in one of the other music degree programs provided they meet the requirements.

Courses for non-majors

Students majoring in a field other than music are welcome and encouraged to register for ensembles, private lessons and a variety of classroom courses in music specifically designed for the non-music major. Some courses require an audition.

Grades and achievement levels

All music majors are required to maintain a cumulative GPA of 2.0 and pass at least one applied achievement level within any two-semester period (not including summers) in order to continue as music majors. Jazz studies majors must pass one applied achievement level of classical instrument study per two-semester period (not including summers) and at least one jazz applied music level within the first three semesters in order to maintain a jazz studies concentration. All music students also must pass MHIS 145-MHIS 146 by the end of the fourth semester. Any student who fails to meet or maintain these standards will not be allowed to continue as a music major. A student may audition for readmission into the department as a music major only with permission from the Department of Music.

A cumulative GPA of 2.8 is required for music education students to qualify for student teaching placement. Music education students who do not maintain a cumulative 2.8 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

Electives in music

Students majoring in a field other than music may register for ensembles, private lessons and a variety of classroom courses in music. Classes in music appreciation, African-American music, introduction to writing music, basic music skills and special offerings in music are specifically designed for the non-music major.

Internship in music

Interested students should consult with a faculty member closely associated with the appropriate field. As the student approaches junior academic standing, he or she may apply to the department for participation in APPM 493. Applications will be reviewed on the basis of academic GPA, instructor recommendation(s), professional promise, and demonstrated interest and competence in the area of study. The student must possess a minimum 2.5 overall GPA with a minimum 3.0 GPA in major course work in music. All students (including transfers) must have completed a minimum of 60 credits.

All internships for credit are approved by the Department of Music. The experience may also be coordinated by VCU's Cooperative Education/ Internship Program. The latter office requires completion of an application and resume.

Fees

All students registering for applied lessons (APPL 200) pay an applied lesson fee. Current fee rates for applied lessons (<https://accounting.vcu.edu/tuition/fees/>) can be found on the Student Accounting website.

Recital/convocation attendance

All undergraduate majors are required to pass four semesters of recital/convocation attendance for graduation. During each semester of enrollment, the student must attend a minimum number of concerts or recitals plus departmental convocations in order to pass the requirement.

Master class

This requirement consists of participation in weekly master classes in the student's applied major area. For students in the Bachelor of Music program, enrollment in master class is required for each semester that students enroll for a two-credit lesson on their principal performing instrument. A minimum of eight semesters in the performance concentration (jazz studies majors take four semesters classical and four semesters jazz) and six semesters for the music education concentration are required. Students in the Bachelor of Arts in Music program must also enroll in master class each semester they take a two-credit lesson until they complete a minimum of four semesters of master class on the same instrument.

Ensemble requirements

To ensure consistent skill development in ensemble settings, only one large ensemble credit per semester will be counted toward a student's large ensemble requirements. Students whose principal instrument is a band or orchestral instrument must satisfy the large ensemble requirement by performing in a large ensemble on that instrument. Students whose principal instrument is voice must satisfy the requirement by performing in a large choral ensemble on voice. Those whose principal instrument is piano must complete four of their six elective credits by playing the piano in ensembles. Jazz studies majors must have ensembles approved in advance by their adviser or program director. Bachelor of Arts students must earn six credits in either large or small ensembles.

- Music, Bachelor of (B.M.) with a concentration in music education/instrumental (p. 417)
- Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral (p. 419)
- Music, Bachelor of (B.M.) with a concentration in performance/guitar (p. 421)
- Music, Bachelor of (B.M.) with a concentration in performance/jazz studies (p. 423)
- Music, Bachelor of (B.M.) with a concentration in performance/piano (p. 425)
- Music, Bachelor of (B.M.) with a concentration in performance/strings (p. 427)
- Music, Bachelor of (B.M.) with a concentration in performance/voice (p. 429)
- Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion (p. 431)
- Music, Bachelor of Arts (B.A.) (p. 432)
- Music, minor in (p. 434)

Music, Bachelor of (B.M.) with a concentration in music education/instrumental

The Bachelor of Music with a music education/instrumental concentration incorporates requirements necessary to qualify for the commonwealth of Virginia's Collegiate Professional Certificate to teach music in public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states. A prospective student intending to pursue the instrumental concentration endorsement must complete the degree with a primary instrument of wind band or orchestra tradition; for those seeking the vocal-choral concentration endorsement, this instrument must be voice. For a student who wishes to elect the guitar or piano as a primary instrument, please contact the music department for details.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional music teaching competencies
- Acquire professional procedures
- Demonstrate professional performance skills
- Develop comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Special requirements

A cumulative GPA of 3.0 is required for music education students to qualify for student teaching placement. Music education students who do not maintain a cumulative 3.0 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

Degree requirements for Music, Bachelor of (B.M.) with a concentration in music education/instrumental

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2

APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (six semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
APPL 320	Applied Lessons Secondary Instrument (four semesters)	4
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
MHIS 256	Musicianship Practicum	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MUED 301	Methods and Techniques: Guitar	1
MUED 302	Methods and Techniques: Voice	1
MUED 303	Methods and Techniques: Woodwinds	1
MUED 304	Methods and Techniques: Woodwinds	1
MUED 305	Methods and Techniques: Brass	1
MUED 306	Methods and Techniques: Strings	1
MUED 307	Methods and Techniques: Percussion	1
MUED 380	Introduction to Music Education	2
MUED 381	Methods and Practicum in Elementary Music Education	3
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 384	Marching Band Techniques	2
MUED 385	Music Education Technology and Arranging	2
MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6
Ensemble requirement (audition may be required): Select seven credits from the following:		7
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
• Major electives		
Ensemble elective (audition may be required): Select at least one from the following list:		3
APPM 363	Flute Choir	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	

Additional electives may come from this list or a choice from the ensemble requirement above		
Ancillary requirements		
EDUS 301	Human Development and Learning	3
Open electives		
Select any course.		2
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
General education course		3
Term Hours:		17

Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
MUED 30X	Methods and Techniques	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15

Sophomore year		
Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4

MUED 303	Methods and Techniques: Woodwinds	1
MUED 30X	Methods and Techniques	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 16

Spring semester

APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
EDUS 301	Human Development and Learning	3
MHIS 256	Musicianship Practicum	2
MUED 304	Methods and Techniques: Woodwinds	1
General education course		3

Term Hours: 14

Junior year

Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MUED 30X	Methods and Techniques	1
MUED 380	Introduction to Music Education	2
General education course		3

Term Hours: 15

Spring semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
MHIS 322	Classical Music Survey II	2
MUED 30X	Methods and Techniques	1
MUED 381	Methods and Practicum in Elementary Music Education	3
General education course		3

Term Hours: 15

Senior year

Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPM 3XX	ensemble requirement	1
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 384	Marching Band Techniques	2
MUED 30X	Methods and Techniques	1
MUED 385	Music Education Technology and Arranging	2
General education course		3

Open elective 2

Term Hours: 16

Spring semester

MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6

Term Hours: 12

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral

The Bachelor of Music with a music education/vocal-choral concentration incorporates requirements necessary to qualify for the commonwealth of Virginia's Collegiate Professional Certificate to teach music in public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states. A prospective student intending to pursue the instrumental concentration endorsement must complete the degree with a primary instrument of wind band or orchestra tradition; for those seeking the vocal-choral concentration endorsement, this instrument must be voice. For a student who wishes to elect the guitar or piano as a primary instrument, please contact the music department for details.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional music teaching competencies
- Acquire professional procedures
- Demonstrate professional performance skills
- Develop comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Special requirements

A cumulative GPA of 3.0 is required for music education students to qualify for student teaching placement. Music education students who do not maintain cumulative 3.0 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

Degree requirements for Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 320	Applied Lessons Secondary Instrument (four semesters)	4
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (six semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
APPM 161	Lyric Diction I	3
APPM 162	Lyric Diction II	3
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 377	Vocal Chamber Ensemble	1
MHIS 256	Musicianship Practicum	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MUED 274	Functional Keyboarding for the Music Classroom	1
MUED 301	Methods and Techniques: Guitar	1
MUED 302	Methods and Techniques: Voice	1
MUED 303	Methods and Techniques: Woodwinds	1
MUED 304	Methods and Techniques: Woodwinds	1
MUED 305	Methods and Techniques: Brass	1
MUED 306	Methods and Techniques: Strings	1
MUED 307	Methods and Techniques: Percussion	1
MUED 380	Introduction to Music Education	2

MUED 381	Methods and Practicum in Elementary Music Education	3
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 385	Music Education Technology and Arranging	2
MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6
• Ensemble requirement (audition may be required): Select seven credits from the following:		7
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Vox Concordia	

Ancillary requirements

EDUS 301	Human Development and Learning	3
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Open electives

Select any course.	1
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Total Hours **122**

The minimum number of credit hours required for this degree is 122.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (voice)	2
APPM 161	Lyric Diction I	3
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX ensemble requirement		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		17

Spring semester

APPL 312	Applied Lessons (voice)	2
APPM 162	Lyric Diction II	3
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensemble requirement		1
MHIS 146	Theory and Aural Skills II	4
MUED 30X	Methods and Techniques	1

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3

Term Hours: 18

Sophomore year

Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
MUED 303	Methods and Techniques: Woodwinds	1
MUED 30X	Methods and Techniques	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 15

Spring semester

APPL 314	Applied Lessons (voice)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
EDUS 301	Human Development and Learning	3
MHIS 256	Musicianship Practicum	2
MUED 304	Methods and Techniques: Woodwinds	1
General education course		3
Open elective		1

Term Hours: 14

Junior year

Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MUED 30X	Methods and Techniques	1
MUED 380	Introduction to Music Education	2
General education course		3

Term Hours: 14

Spring semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
MHIS 322	Classical Music Survey II	2
MUED 30X	Methods and Techniques	1

MUED 274	Functional Keyboarding for the Music Classroom	1
MUED 381	Methods and Practicum in Elementary Music Education	3
General education course		3

Term Hours: 16

Senior year

Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPM 3XX	Ensemble requirement	1
APPM 377	Vocal Chamber Ensemble	1
MUED 30X	Methods and Techniques	1
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 385	Music Education Technology and Arranging	2
General education course		3
General education course		3

Term Hours: 16

Spring semester

MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6

Term Hours: 12

Total Hours: 122

The minimum number of credit hours required for this degree is 122.

Music, Bachelor of (B.M.) with a concentration in performance/guitar

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/guitar

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
APPL 320	Applied Lessons Secondary Instrument (three semesters)	3
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 364	Guitar Ensemble (eight semesters)	8
APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 256	Musicianship Practicum	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MHIS 380	Survey of the Music Industry	3
Ensemble (audition may be required): Select four credits from the ensemble requirements or from the following.		4
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 377	Vocal Chamber Ensemble	
APPM 378	Vox Concordia	

• Music electives	15
Select from any AMPT, APPL, APPM, ARTS, MHIS, MUED or MUSC course not otherwise required for the degree.	

Open electives	
Select any course.	11
Total Hours	120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance (guitar)	0
APPM 299	Master Class	0
APPM 364	Guitar Ensemble	1
APPM 3XX ensemble elective		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		15
Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance (guitar)	0
APPM 299	Master Class	0
APPM 364	Guitar Ensemble	1
APPM 3XX ensemble elective		1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15
Sophomore year		
Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

General education course	3
Term Hours:	16
Spring semester	
APPL 314 Applied Lessons (guitar)	2
APPL 320 Applied Lessons Secondary Instrument	1
APPM 199 Recital/Convocation Attendance	0
APPM 299 Master Class (guitar)	0
APPM 364 Guitar Ensemble	1
APPM 3XX ensemble elective	1
MHIS 256 Musicianship Practicum	2
General education course	3
General education course	3
Open elective	2
Term Hours:	15

Junior year**Fall semester**

APPL 320 Applied Lessons Secondary Instrument	1
APPL 415 Applied Lessons (guitar)	2
APPM 299 Master Class (guitar)	0
APPM 364 Guitar Ensemble	1
APPM 381 Conducting	2
APPM 3XX ensemble elective	1
MHIS 305 Form and Analysis I	2
MHIS 321 Classical Music Survey I	2
General education course	3
Term Hours:	14

Spring semester

APPL 320 Applied Lessons Secondary Instrument	1
APPL 416 Applied Lessons and Junior Recital (guitar)	2
APPM 299 Master Class (guitar)	0
APPM 364 Guitar Ensemble	1
APPM 463 Pedagogy	2
MHIS 322 Classical Music Survey II	2
Music electives	6
Term Hours:	14

Senior year**Fall semester**

APPL 417 Applied Lessons (guitar)	2
APPM 299 Master Class (guitar)	0
APPM 364 Guitar Ensemble	1
MHIS 380 Survey of the Music Industry	3
Music electives	6
Open electives	3
Term Hours:	15

Spring semester

APPL 418 Applied Lessons and Senior Recital (guitar)	2
APPM 299 Master Class (guitar)	0
APPM 364 Guitar Ensemble	1
APPM 492 Senior Project: Portfolio Review	1
General education course	3
Music elective	3

Open electives	6
Term Hours:	16
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in performance/jazz studies

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/jazz studies

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons	2
APPL 312	Applied Lessons	2
APPL 313	Applied Lessons	2
APPL 314	Applied Lessons	2
APPL 415	Applied Lessons	2
APPL 416	Applied Lessons and Junior Recital	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters of classical master class)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
APPL 417	Applied Lessons	2

APPL 418	Applied Lessons and Senior Recital	2
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 251	Jazz Improvisation I	3
APPM 252	Jazz Improvisation II	3
APPM 272	Jazz Piano for the Non-keyboard Player ¹	1
APPM 399	Jazz Master Class (four semesters)	0
APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 147	Jazz Theory and Aural Skills	3
MHIS 311	Jazz Arranging I	3
MHIS 312	Jazz Arranging II	3
MHIS 324	Jazz History	3
MHIS 380	Survey of the Music Industry	3
MHIS 405	Jazz Form and Analysis I	3
Secondary applied lessons ²		8
APPL 200	Applied Lessons	
Ensemble requirement:		9
Jazz orchestra (four credits total from either)		
APPM 360	Jazz Orchestra I	
APPM 396	Jazz Orchestra II	
Jazz combo (five credits)		
APPM 361	Small Jazz Ensemble	
Ensemble elective (audition may be required): Select three credits from the following:		3
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 360	Jazz Orchestra I	
APPM 361	Small Jazz Ensemble	
APPM 363	Flute Choir	
APPM 364	Guitar Ensemble	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 372	Brass Ensemble	
APPM 396	Jazz Orchestra II	
Open electives¹		
Select any course.		6-7
Total Hours		120

1

APPM 272 is required if the principal instrument is not piano, and these students will be required to take a total of six credits of open electives. Students who are not required to take APPM 272 will take seven credits of open electives.

2

Secondary lessons are completed through study of classical instruction of the student's principal instrument. Jazz saxophone students may

choose to take eight semesters of classical saxophone or four semesters of classical saxophone, as well as four consecutive semesters of classical flute, clarinet, oboe or bassoon.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
APPL 200	Applied Lessons	1
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (secondary instrument)	0
APPM 361	Small Jazz Ensemble	1
APPM 3XX	ensemble elective	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		16

Spring semester

APPL 200	Applied Lessons	1
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (secondary instrument)	0
APPM 3XX	ensemble elective	1
MHIS 146	Theory and Aural Skills II	4
MHIS 147	Jazz Theory and Aural Skills	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		15

Sophomore year

Fall semester		Hours
APPL 200	Applied Lessons	1
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 251	Jazz Improvisation I	3
APPM 272	Jazz Piano for the Non-keyboard Player ¹	1
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra I	1
APPM 361	Small Jazz Ensemble	1
MHIS 245	Theory and Aural Skills III	4
General education course		3
Term Hours:		16

Spring semester

APPL 200	Applied Lessons	1
APPL 314	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 252	Jazz Improvisation II	3
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra I	1
APPM 361	Small Jazz Ensemble	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Open elective		2
Term Hours:		13

Junior year**Fall semester**

APPL 200	Applied Lessons	1
APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra I	1
APPM 361	Small Jazz Ensemble	1
APPM 399	Jazz Master Class	0
MHIS 120	Music in Culture	2
MHIS 311	Jazz Arranging I	3
General education course		3
General education course		3
Term Hours:		16

Spring semester

APPL 200	Applied Lessons	1
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra I	1
APPM 381	Conducting	2
APPM 399	Jazz Master Class	0
APPM 463	Pedagogy	2
MHIS 312	Jazz Arranging II	3
MHIS 322	Classical Music Survey II	2
MHIS 324	Jazz History	3
Term Hours:		16

Senior year**Fall semester**

APPL 200	Applied Lessons	1
APPL 417	Applied Lessons (principal instrument)	2
APPM 299	Master Class (secondary instrument)	0
APPM 361	Small Jazz Ensemble	1
APPM 399	Jazz Master Class	0
MHIS 380	Survey of the Music Industry	3
MHIS 405	Jazz Form and Analysis I	3
General education course		3
Term Hours:		13

Spring semester

APPL 200	Applied Lessons	1
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APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 3XX	Ensemble elective	1
APPM 299	Master Class (secondary instrument)	0
APPM 399	Jazz Master Class	0
APPM 492	Senior Project: Portfolio Review	1
General education course		3
General education course		3
Open electives		4
Term Hours:		15
Total Hours:		120

1

APPM 272 is required if the principal instrument is not piano, and these students will be required to take a total of six credits of open electives. Students who are not required to take APPM 272 will take seven credits of open electives.

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in performance/piano

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/piano

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30

Major requirements

• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2

APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
• Additional major requirements		
APPL 320	Applied Lessons Secondary Instrument (three semesters)	3
APPL 417	Applied Lessons	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
APPM 362	Accompanying: Piano (two semesters)	2
APPM 367	Piano Ensemble (complete four semesters)	4
APPM 373	Advanced Keyboard Skills I	1
APPM 374	Advanced Keyboard Skills II	1
APPM 463	Pedagogy (piano)	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 256	Musicianship Practicum	2
MHIS 303	Piano Literature Through 1828	2
MHIS 304	Piano Literature Since 1828	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MHIS 322	Classical Music Survey II	2
Ensemble: Select two credits from the following.		2
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Vox Concordia	
• Music electives		12
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.		
Ancillary requirements		
Open electives		
Select any course.		18
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
		Hours
APPL 311	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 373	Advanced Keyboard Skills I	1
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
Term Hours:		14
Spring semester		
APPL 312	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
General education course		3
Term Hours:		16
Sophomore year		
Fall semester		
APPL 313	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Open elective		3
Term Hours:		17
Spring semester		
APPL 314	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 374	Advanced Keyboard Skills II	1
MHIS 256	Musicianship Practicum	2
General education course		3
Open elective		6
Term Hours:		14
Junior year		
Fall semester		
APPL 320	Applied Lessons Secondary Instrument	1

APPL 415	Applied Lessons (piano)	2
APPM 299	Master Class (piano)	0
APPM 362	Accompanying: Piano	1
APPM 367	Piano Ensemble	1
APPM 381	Conducting	2
MHIS 303	Piano Literature Through 1828 (piano)	2
or	or Pedagogy	
APPM 463		
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
General education course		3
Term Hours:		16

Spring semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (piano)	2
APPM 299	Master Class (piano)	0
APPM 362	Accompanying: Piano	1
APPM 367	Piano Ensemble	1
MHIS 304	Piano Literature Since 1828	2
MHIS 322	Classical Music Survey II	2
Music electives		6
Term Hours:		15

Senior year**Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 417	Applied Lessons (piano)	2
APPM 299	Master Class (piano)	0
APPM 367	Piano Ensemble	1
MHIS 303	Piano Literature Through 1828 (piano)	2
or	or Pedagogy	
APPM 463		
General education course		3
Open electives		6
Term Hours:		15

Spring semester

APPL 418	Applied Lessons and Senior Recital (piano)	2
APPM 299	Master Class (piano)	0
APPM 367	Piano Ensemble	1
APPM 492	Senior Project: Portfolio Review	1
Music electives		6
Open electives		3
Term Hours:		13
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in performance/strings

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of

musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/strings

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
APPL 320	Applied Lessons Secondary Instrument (three semesters)	3
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 355	Orchestra (eight semesters)	8

APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 256	Musicianship Practicum	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MHIS 380	Survey of the Music Industry	3
Ensemble elective (audition may be required): Select four credits from the following:		4
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 371	String Chamber Music	
• Music electives		12
Select from any AMPT, APPL, APPM, ARTS, MHIS, MUED, or MUSC courses not otherwise required for the degree.		
Open electives		
Select any course.		14
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 3XX	ensemble elective	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		15
Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 3XX	ensemble elective	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15

Sophomore year

Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		16
Spring semester		
APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 3XX	ensemble elective	1
MHIS 256	Musicianship Practicum	2
General education course		3
General elective course		3
Open elective		2
Term Hours:		15

Junior year

Fall semester		
APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 381	Conducting	2
APPM 3XX	ensemble elective	1
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
Open elective		3
Term Hours:		14
Spring semester		
APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 463	Pedagogy	2
MHIS 322	Classical Music Survey II	2
Music electives		6
Term Hours:		14

Senior year

Fall semester		
APPL 417	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1

MHIS 380	Survey of the Music Industry	3
General education course		3
General education course		3
Music elective		3
Term Hours:		15
Spring semester		
APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 492	Senior Project: Portfolio Review	1
Open electives		9
Music elective		3
Term Hours:		16
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in performance/voice

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/voice

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2

APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2

• Additional major requirements

APPL 320	Applied Lessons Secondary Instrument (two semesters)	2
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
APPM 161	Lyric Diction I	3
APPM 162	Lyric Diction II	3
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 377	Vocal Chamber Ensemble (two semesters)	2
APPM 385	Opera Theatre	2
APPM 463	Pedagogy (vocal)	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 256	Musicianship Practicum	2
MHIS 321	Classical Music Survey I	2
MHIS 465	History of the Art Song	2

• Ensemble requirements (audition may be required): Select seven credits from the following:

APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Vox Concordia	

Ensemble elective (audition may be required): Select one credit from the ensemble requirement list or the following:

APPM 377	Vocal Chamber Ensemble	1
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• Major electives 6
Select from any AMPT, APPL, APPM, ARTS, MHIS, MUED, or MUSC courses not otherwise required for the degree.

Ancillary requirements

Foreign language (GRMN, FREN or ITAL: 101-102) 6

Open electives

Select any course. 12

Total Hours 120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (voice)	2
APPM 161	Lyric Diction I	3
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3
General education course		3
Term Hours:		17

Spring semester

APPL 312	Applied Lessons (principal instrument)	2
APPM 162	Lyric Diction II	3
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) video for Focused Inquiry II	3
General education course		3
Term Hours:		17

Sophomore year

Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (voice)	0
APPM 377	Vocal Chamber Ensemble	1
APPM 3XX	ensemble requirement	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		14

Spring semester

APPL 314	Applied Lessons (voice)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 377	Vocal Chamber Ensemble	1

APPM 3XX	ensemble requirement	1
MHIS 256	Musicianship Practicum	2
General education course		3
General education course		3
General education course		3
Term Hours:		16

Junior year

Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
APPM 463	Pedagogy (voice)	2
MHIS 321	Classical Music Survey I	2
Foreign language 101 (GRMN, FREN or ITAL)		3
Term Hours:		14

Spring semester

APPL 416	Applied Lessons and Junior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 322	Classical Music Survey II	2
Foreign language 102 (GRMN, FREN or ITAL)		3
General education course		3
Music elective		2
Term Hours:		13

Senior year

Fall semester

APPL 417	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 385	Opera Theatre	2
MHIS 465	History of the Art Song	2
Music elective		2
Open elective		6
Term Hours:		14

Spring semester

APPL 418	Applied Lessons and Senior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	Ensemble requirement	1
APPM 492	Senior Project: Portfolio Review	1
General education course		3
Music elective		2
Open electives		6
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 322	Classical Music Survey II	2

• Additional major requirements

APPL 320	Applied Lessons Secondary Instrument (three semesters)	3
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review	1
MHIS 256	Musicianship Practicum	2
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2
MHIS 380	Survey of the Music Industry	3
Ensemble (audition may be required): Select eight credits from the following:		8
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
Ensemble elective (audition may be required): Select four credits from the ensemble requirements or from the following:		4
APPM 363	Flute Choir	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	
• Music electives:		15
Select from any AMPT, APPL, APPM, ARTS, MHIS, MUED, or MUSC courses not otherwise required for the degree.		
Open electives		
Select any course.		11
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensemble elective		1
APPM 3XX ensemble requirement		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

General education course		3
Term Hours:		15
Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15
Sophomore year		
Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 120	Music in Culture	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		16
Spring semester		
APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 256	Musicianship Practicum	2
General education course		3
General education course		3
Open electives		3
Term Hours:		16
Junior year		
Fall semester		
APPL 415	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	Ensemble requirement	1
APPM 381	Conducting	2
APPM 3XX	ensemble elective	1
MHIS 305	Form and Analysis I	2
MHIS 321	Classical Music Survey I	2

Music elective		3
Term Hours:		14
Spring semester		
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 463	Pedagogy	2
MHIS 322	Classical Music Survey II	2
Music electives		6
Term Hours:		14
Senior year		
Fall semester		
APPL 417	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 380	Survey of the Music Industry	3
General education course		3
General education course		3
Music elective		3
Term Hours:		15
Spring semester		
APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 492	Senior Project: Portfolio Review	1
Open electives		8
Music elective		3
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Music, Bachelor of Arts (B.A.)

The Bachelor of Arts (B.A.) in Music is designed for students who want a degree that combines a breadth of general studies with a major in music. Included are courses in basic theory, aural skills, applied performance, music history and foreign language, as well as music and open electives.

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate performance skills
- Demonstrate musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Degree requirements for Music, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (four semesters)	0
APPM 492	Senior Project: Portfolio Review	1
MHIS 120	Music in Culture	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 256	Musicianship Practicum	2
MHIS 321	Classical Music Survey I	2
MHIS 322	Classical Music Survey II	2
• Additional major requirements		
Select one pair of the following:		2
APPM 173 & APPM 174	Keyboard Skills I and Keyboard Skills II	
APPM 373 & APPM 374	Advanced Keyboard Skills I and Advanced Keyboard Skills II	
Ensemble (audition may be required): Select six credits from the following.		6
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 360	Jazz Orchestra I	
APPM 361	Small Jazz Ensemble	
APPM 363	Flute Choir	
APPM 364	Guitar Ensemble	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	
APPM 377	Vocal Chamber Ensemble	
APPM 378	Vox Concordia	
• Major electives		9

Select from any AMPT, APPL, APPM, ARTS, MHIS, MUED, or MUSC courses not otherwise required for the degree.

Ancillary requirements		
HUMS 202	Choices in a Consumer Society	1
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		37-45
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173 or APPM 373	Keyboard Skills I or Advanced Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
video for Focused Inquiry I		
General education course		3
Term Hours:		14

Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 174 or APPM 374	Keyboard Skills II or Advanced Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
video for Focused Inquiry II		
General education course		3
Term Hours:		14

Sophomore year		
Fall semester		Hours
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 120	Music in Culture	2

MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15
Spring semester		
APPL 314	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 256	Musicianship Practicum	2
General education course		3
Open electives		8
Term Hours:		16
Junior year		
Fall semester		
APPM 3XX ensembles		1
MHIS 321	Classical Music Survey I	2
Foreign language course (101 level)		3
General education course		3
General education course		3
Music elective		3
Term Hours:		15
Spring semester		
APPM 3XX ensembles		1
MHIS 322	Classical Music Survey II	2
Foreign language course (102 level)		3
General education course		3
Music elective		3
Open elective		4
Term Hours:		16
Senior year		
Fall semester		
APPM 492	Senior Project: Portfolio Review	1
HUMS 202	Choices in a Consumer Society	1
Music elective		3
Open electives		10
Term Hours:		15
Spring semester		
Open electives		15
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Music, minor in

Any VCU student may declare a minor in music with approval from the Department of Music. The music minor comprises 18 credits of which a minimum of nine credits must be at the 300 or 400 level. The minor in music must include a minimum of two semesters of study of APPL 200 and two semesters of APPM 300-level ensemble courses. A music adviser counsels each student about the selection of appropriate courses based on the student's competence and interest. Depending on

audition results and course prerequisites, students may select from the following to meet their minor requirements:

Course	Title	Hours
Applied lessons ¹		
APPL 200	Applied Lessons (1 credit/half-hour lessons - audition may be required)	
Applied music ²		
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 360	Jazz Orchestra	
APPM 361	Small Jazz Ensemble	
APPM 362	Accompanying: Piano	
APPM 363	Flute Choir	
APPM 364	Guitar Ensemble	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	
APPM 377	Vocal Chamber Ensemble	
APPM 378	Vox Concordia	
Music courses ³		
Any APPL, APPM, MHIS, MUED or MUSC courses		
Additional courses		
CREA 201	The Creative Economy	
CREA 300	Idea Accelerator	
CREA 350	Piloting the Enterprise	
CREA 450	Creative Disruption	

1

One credit per half-hour lesson – audition may be required.

2

One credit each – audition may be required.

3

Audition or prerequisite may be required; see individual course descriptions for details.

A 2.0 GPA is required among courses applied toward the minor. A minimum total of 18 credits is required.

Department of Painting and Printmaking

arts.vcu.edu/paintingprintmaking (<http://arts.vcu.edu/paintingprintmaking/>)

The Department of Painting and Printmaking offers an undergraduate program that earns a Bachelor of Fine Arts in Painting and Printmaking, as well as a graduate program of study that leads to the Master of Fine Arts in Fine Arts. Students admitted to the programs are expected to have a high level of competence in either painting or printmaking.

The graduate program is designed to encourage the development of professional attitudes and skills, with an emphasis on individual investigation.

The department is housed in the Fine Arts Building with 15 individual graduate studios plus a large graduate printmaking area in addition four state-of-the-art undergraduate printmaking studios: etching, lithography, screenprinting and digital. These facilities provide an excellent physical environment for the programs with easy access to the other fine art areas of sculpture and crafts. Established in 1928, the Department of Painting and Printmaking was the first department in what has become the School of the Arts. For nearly 70 years, the department has made significant contributions to the development of the School of the Arts' reputation as one of the premier art schools in the country.

The department supports an active and ambitious program of visiting artists and lecturers. Leading figures in the world of contemporary art visit to discuss their work, critique, visit studios, conduct workshops and meet with students throughout the year.

The Master of Fine Arts degree is the terminal degree in the studio areas of fine arts and is a requirement for most college and university teaching positions. Many graduate students have gained teaching experience in the department as part of their assistantship responsibilities, teaching classes in painting, drawing and printmaking. The department assists graduate students financially through a variety of teaching assistantships, graduate assistantships and scholarships.

- Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) (p. 435)
- Painting and printmaking, minor in (p. 436)

Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)

Faculty and students in the Department of Painting and Printmaking work together in a professional and creative learning environment. The undergraduate curriculum enables students to adopt a specialized focus within the discipline and use elective options to pursue other areas of interest in the School of the Arts, the university and the community. It also permits students to tailor a course of study suited to their professional and personal ambitions. The undergraduate program provides students with opportunities for concentrated experiences in both practice and theory as a foundation for independent exploration and artistic development. Classroom discussions invite students to examine a range of contemporary critical issues, which enable them to understand their own studio work in relation to historical continuum. As students develop their skills in critical analysis they are challenged to articulate and justify their ideas both visually and verbally.

The size and diversity of the faculty guarantee exposure to a plurality of ideas and stylistic approaches. In addition, the department's visiting artist program brings to campus leading figures in the world of contemporary art for discussions of their work, critiques of student work and workshops.

Learning outcomes

Upon completing this program:

- Students are expected to achieve technical proficiency in painting and printmaking, and possess the skill to translate their creative ideas through studio practice.

- Students are expected to develop personal voices as artists based on an awareness of social, historical and critical issues.
- Students have the ability to think critically and to articulate their ideas via conversation, public speaking and writing.
- Students comprehend the potential impact of contemporary art on culture.

Special requirements

- Open electives: The 12 credits required in this area may be either academic (lecture) or studio, but nine additional studio credits must be taken outside of the Department of Painting and Printmaking.
- Studio courses are designed to be taken in the following sequence: 200 level (basic), 300 level (intermediate) and 400 level (advanced). Instructors may ask you to withdraw from a course if you lack the appropriate background of knowledge and experience.

Degree requirements for Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PAPR 201	Painting From Observation	4
PAPR 231	Drawing from Observation	4
PAPR 290	Concepts and Issues	2
PAPR 292	Concepts and Issues II	2
PAPR 390	Junior Seminar	2
PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2
• Additional major requirements		
Select two from:		4
PAPR 212	Print Techniques: Etching	
PAPR 213	Print Techniques: Screenprint	
PAPR 306	Print Techniques: Lithography	
PAPR 307	Print Techniques: Digital	
PAPR 304 or PAPR 314	Paint Practice and Theory Print Practice and Theory	4
• Major electives		
PAPR 300- to 400-level courses in painting, printmaking or drawing		12
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		

ARTH electives	9
Studio electives (outside PAPR) ¹	9
Open electives	
Select any course.	12
Total Hours	120

1

Select from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS, PHTO, SCPT or THEA.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Play course		
video for		
Focused		
Inquiry I		
General education course		3
Term Hours:		16

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general	3
Play course	education UNIV foundations)	
video for		
Focused		
Inquiry II		
General education course		3
Term Hours:		16

Sophomore year

Fall semester		Hours
PAPR 201	Painting From Observation	4
PAPR 231	Drawing from Observation	4
PAPR 290	Concepts and Issues	2
UNIV 200	Inquiry and the Craft of Argument (satisfies	3
	general education UNIV foundations)	
ARTH elective		3
Term Hours:		16

Spring semester

PAPR 212	Print Techniques: Etching	2
or	or Print Techniques: Screenprint	
PAPR 213		
PAPR 292	Concepts and Issues II	2
PAPR 306	Print Techniques: Lithography	2
or	or Print Techniques: Digital	
PAPR 307		
General education course		3
General education course		3
Open elective		3

Term Hours: 15

Junior year

Fall semester

PAPR 300- or 400-level elective		4
General education course		3
Open electives		6
Studio elective (from outside the department)		3
Term Hours:		16

Spring semester

PAPR 304	Paint Practice and Theory	4
or	or Print Practice and Theory	
PAPR 314		
PAPR 390	Junior Seminar	2
General education course		3
Studio elective (from outside the department)		3
Term Hours:		12

Senior year

Fall semester

PAPR 490	Senior Seminar	2
PAPR 300- or 400-level electives		8
ARTH elective		3
General education course		3
Term Hours:		16

Spring semester

PAPR 402	Senior Degree Project	4
ARTH elective		3
Open elective		3
Studio elective (from outside the department)		3
Term Hours:		13

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Painting and printmaking, minor in

Successful completion of the Art Foundation Program is a prerequisite for the minor, which consists of the following:

Course	Title	Hours
Select at least nine credits in any painting and printmaking courses		9
Select at least nine credits in upper-level painting and printmaking courses		9

Total Hours 18

Department of Photography and Film

arts.vcu.edu/photofilm (<http://arts.vcu.edu/photofilm/>)

The Department of Photography and Film aims to facilitate a comprehensive artistic, technical and intellectual understanding and use of the mediums of photography and film; to provide a rigorous education in the arts, specifically in photographic and moving image media, and a broad education in other academic subjects; to foster a climate that inspires creativity, intellectual curiosity, freedom of expression and critical-thinking. The department fosters a pluralistic approach that allows both faculty and students to expand the traditional boundaries of the respective media and engage in multidisciplinary practice.

The department offers undergraduate concentrations in photography and filmmaking resulting in a Bachelor of Fine Arts in Photography and Film, as well as a graduate program that leads to a Master of Fine Arts in Fine Arts with a concentration in photography and film.

To promote student development and research of contemporary art practice and theory, the Department of Photography and Film presents a diverse and active visiting artist program. Through lectures, critiques and research courses, students are exposed to the valuable insights of respected international artists, scholars and critics. In addition, the visiting artists teach topics courses exploring the current artistic and conceptual foundations found in their own work. Graduate students are encouraged to establish an individual critical dialogue with the visiting artists and faculty and attain a strong critical and historical basis for their work.

The facilities include several critique and screening rooms; a large black-and-white darkroom; a large state-of-the-art digital photography and film editing lab; a shooting studio; a student checkout center with a wide range of still photography and film cameras, professional lights and sound recording equipment; a professionally staffed graphics lab located in the same building that provides student with digital services on several high-tech imaging devices; and individual graduate M.F.A. studios.

- Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in filmmaking (p. 437)
- Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in photography (p. 439)

Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in filmmaking

The Department of Photography and Film offers a variety of basic, intermediate and advanced photography and filmmaking classes leading to a Bachelor of Fine Arts in Photography and Film.

The program provides students with the ability to intelligently express, investigate or document using photography and/or film and to interpret meaning in still and moving images. Emphasis is placed on photography and film as contemporary fine arts. The department promotes a fundamental and effective philosophy that students maintain creative freedom, have access to resources and are enrolled in courses in which they can refine their voices and skills through traditional and contemporary media, tools and professional working methods.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Historical perspectives**
Students will clearly recall a functional knowledge of photographic and independent film history and theory, define the relationship of photography/film to the visual disciplines and relate the medium's influence on culture. Students will incorporate a broad perception of cultural diversity including age, race, gender, ethnicity, nationality, etc., communicating insight and ownership of a personal meaning of diversity.
- **Applied criticism and theory**
Students can analyze, assess and debate contemporary sociopolitical issues and theoretical discourses within the context of contemporary photography and film as well as related media practice and research. Topics to be examined can include but are not limited to multiculturalism, environmentalism, queer theory, feminist and gender studies, postmodernism, modernism, psychoanalytical, Marxism, post-structuralism, post-colonialism and post-digital. Students will incorporate a broad perception of cultural diversity including age, race, gender, ethnicity, nationality, etc., communicating insight and ownership of a personal meaning of diversity within applied criticism and theory.
- **Effective visual communication**
Students can effectively author and present visual illustrations, representations, descriptions, explanations and/or contextualizations of their artistic, research-based and career-oriented photography/film pursuits, ideas and emotions for a broad range of purposes and audiences.
- **Effective oral communication**
Students can effectively deliver oral descriptions, explanations and/or contextualizations of their artistic, research-based and career-oriented photography/film pursuits, ideas and emotions for a broad range of purposes and audiences.
- **Studio technique**
Students definitively recognize, explain, employ, appraise and compute the use of basic to advanced photographic and film tools, techniques, technologies and processes sufficient to advance their work from concept to finished product. Students will display evidence of professional proficiency regarding the methods and modes of production presented in required courses covering technical mastery of antique, analog and digital photography/filmmaking processes and techniques.
- **Professional practice skills**
Students demonstrate and apply broad knowledge of current business practices and resources of professional artists and independent commercial photographers and filmmakers. Students are capable of estimating costs, administering their legal rights as authors of visual art, establishing a professional network, generating and distributing marketing materials, establishing a reliable mode of art production, acquiring additional training, and devising business plans. Students can recognize ethical issues when presented within the context of professional practice.

Degree requirements for Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in filmmaking

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
PHTO 350	Concepts I	3
• Concentration requirements		
PHTO 275	Film as Material	3
PHTO 295	Revolutionary Cinema	3
PHTO 361	Sound and Color	3
PHTO 362	Lighting and Cinematography	3
PHTO 377	The Film Image	3
PHTO 390	Writing and Directing for the Screen	3
PHTO 394	Documentary I	3
PHTO 436	Senior Suitcase	3
PHTO 475	Advanced Production Workshop	3
PHTO 484 & PHTO 485	Thesis Film I and Thesis Film II	6
PHTO 494	Documentary II	3
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
ARTH 270 & ARTH 271	History of the Motion Picture I and History of the Motion Picture II	6
ARTH 374 or ARTH 370	Studies in Film or History of Animated Film	3
Art electives		7
Open electives		
Select any course.		9
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		16
Spring semester		
ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16
Sophomore year		
Fall semester		
ARTH 270	History of the Motion Picture I	3
PHTO 275	Film as Material	3
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
ARTH 271	History of the Motion Picture II	3
PHTO 362	Lighting and Cinematography	3
PHTO 377	The Film Image	3
PHTO 394	Documentary I	3
General education course		3
Term Hours:		15
Junior year		
Fall semester		
PHTO 350	Concepts I	3
PHTO 390	Writing and Directing for the Screen	3
PHTO 494	Documentary II	3
Art elective		4
General education course		3
Open elective		3
Term Hours:		19

Spring semester

PHTO 295	Revolutionary Cinema	3
PHTO 361	Sound and Color	3
PHTO 475	Advanced Production Workshop	3
General education course		3
Open elective		3

Term Hours: 15

Senior year**Fall semester**

ARTH 374	Studies in Film	3
PHTO 436	Senior Suitcase	3
PHTO 484	Thesis Film I	3
General education course		3

Term Hours: 12

Spring semester

PHTO 485	Thesis Film II	3
Art elective		3
General education course		3
Open elective		3

Term Hours: 12

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in photography

The Department of Photography and Film offers a variety of basic, intermediate and advanced photography and filmmaking classes leading to a Bachelor of Fine Arts in Photography and Film.

The program provides students with the ability to intelligently express, investigate or document using photography and/or film and to interpret meaning in still and moving images. Emphasis is placed on photography and film as contemporary fine arts. The department promotes a fundamental and effective philosophy that students maintain creative freedom, have access to resources and are enrolled in courses in which they can refine their voices and skills through traditional and contemporary media, tools and professional working methods.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Historical perspectives**

Students will clearly recall a functional knowledge of photographic and independent film history and theory, define the relationship of photography/film to the visual disciplines and relate the medium's influence on culture. Students will incorporate a broad perception of cultural diversity including age, race, gender, ethnicity, nationality, etc., communicating insight and ownership of a personal meaning of diversity.

- **Applied criticism and theory**

Students can analyze, assess and debate contemporary sociopolitical issues and theoretical discourses within the context of contemporary

photography and film as well as related media practice and research. Topics to be examined can include but are not limited to multiculturalism, environmentalism, queer theory, feminist and gender studies, postmodernism, modernism, psychoanalytical, Marxism, post-structuralism, post-colonialism and post-digital. Students will incorporate a broad perception of cultural diversity including age, race, gender, ethnicity, nationality, etc., communicating insight and ownership of a personal meaning of diversity within applied criticism and theory.

- **Effective visual communication**

Students can effectively author and present visual illustrations, representations, descriptions, explanations and/or contextualizations of their artistic, research-based and career-oriented photography/film pursuits, ideas and emotions for a broad range of purposes and audiences.

- **Effective oral communication**

Students can effectively deliver oral descriptions, explanations and/or contextualizations of their artistic, research-based and career-oriented photography/film pursuits, ideas and emotions for a broad range of purposes and audiences.

- **Studio technique**

Students definitively recognize, explain, employ, appraise and compute the use of basic to advanced photographic and film tools, techniques, technologies and processes sufficient to advance their work from concept to finished product. Students will display evidence of professional proficiency regarding the methods and modes of production presented in required courses covering technical mastery of antique, analog and digital photography/filmmaking processes and techniques.

- **Professional practice skills**

Students demonstrate and apply broad knowledge of current business practices and resources of professional artists and independent commercial photographers and filmmakers. Students are capable of estimating costs, administering their legal rights as authors of visual art, establishing a professional network, generating and distributing marketing materials, establishing a reliable mode of art production, acquiring additional training, and devising business plans. Students can recognize ethical issues when presented within the context of professional practice.

Degree requirements for Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in photography

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
PHTO 350	Concepts I	3
• Concentration requirements		
PHTO 243	Darkroom	3
PHTO 260	Experiments in Sequencing	3

PHTO 307	Processes and Techniques	3
PHTO 340	Lighting I: Studio	3
PHTO 352	Concepts II: Junior Project	3
PHTO 381	Digital Imaging II	3
PHTO 420 & PHTO 421	Senior Thesis I and Senior Thesis II	6
PHTO 435	Professional Practice	3
PHTO 442	Lighting II: Location	3
PHTO 474	Contemporary Critical Perspectives	3

Ancillary requirements

Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6

Additional requirements

ARTH 270 or ARTH 271 or ARTH 370	History of the Motion Picture I History of the Motion Picture II History of Animated Film	3
ARTH 372	History of Photography	3
Arts electives		10

Open electives

Select any course.	12
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Total Hours 120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		
ARTF 131	Drawing Studio	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3
General education course		3
Term Hours:		16
Spring semester		
ARTF 132	Surface Research	3
ARTF 133	Space Research	3

ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations) Play course video for Focused Inquiry II	3
General education course		3
Term Hours:		16

Sophomore year

Fall semester		
ARTH 270	History of the Motion Picture I	3
PHTO 243	Darkroom	3
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
General education course		3
Term Hours:		15
Spring semester		
PHTO 260	Experiments in Sequencing	3
PHTO 307	Processes and Techniques	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Arts elective		3
General education course		3
Term Hours:		15

Junior year

Fall semester		
ARTH 372	History of Photography	3
PHTO 340	Lighting I: Studio	3
PHTO 350	Concepts I	3
PHTO 381	Digital Imaging II	3
Open elective		3
Term Hours:		15
Spring semester		
PHTO 352	Concepts II: Junior Project	3
PHTO 442	Lighting II: Location	3
Art elective		4
General education course		3
General education course		3
Term Hours:		16

Senior year

Fall semester		
PHTO 420	Senior Thesis I	3
PHTO 435	Professional Practice	3
PHTO 474	Contemporary Critical Perspectives	3
General education course		3
Open elective		3
Term Hours:		15
Spring semester		
PHTO 421	Senior Thesis II	3
Art elective		3

Open electives	6
Term Hours:	12
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Department of Sculpture and Extended Media

arts.vcu.edu/sculpture (<http://arts.vcu.edu/sculpture/>)

The Department of Sculpture and Extended Media's eight full-time faculty members and various part-time and technical faculty represent a spectrum of directions and philosophical attitudes. Faculty interests range from formal to conceptual, from the concrete to the evanescent. This breadth of interests is presented to students and contributes to the comprehensive nature of the department. Students are not only exposed to traditional sculpture media, but encouraged to explore technology's parameters and to pursue interdisciplinary activity.

The department encourages sculpture students to broaden their experience in other areas. By promoting a curriculum that encourages students to take a wide range of courses throughout the university, faculty stress links between art, science, the humanities and the world. As a consequence, sculpture students have rich, productive associations with professors in many fields.

Sculpture students are challenged to exploit their full potential by questioning notions of contemporary art. The goal is to provide students with the vocabulary, the seeds of discernment and the skills of both analysis and synthesis in order to become participants in the dialogue of our time. All of this takes place in an environment of high expectation regarding self-motivation, intellectual capacity and responsibility.

The sculpture program is housed in a state-of-the-art facility. Sculpture majors are provided with semi-private, locked studio spaces and are given time, support and encouragement to pursue their independently determined goals.

- Sculpture, Bachelor of Fine Arts (B.F.A.) (p. 441)
- Sculpture, minor in (p. 443)

Sculpture, Bachelor of Fine Arts (B.F.A.)

The Department of Sculpture and Extended Media is a heterogeneous group of students and artists/teachers. Together, we examine the fundamental, philosophical, critical, technical, and historical components of art. We do so with an eye toward developing and advancing the discipline of sculpture in its broadest and most inclusive terms within an atmosphere of mutual respect.

Our charge is to create an environment of speculation and high expectation regarding self-motivation, intellectual capacity, and responsibility in order to establish conditions that promote student's ability to construct a thinking self. It is to explore and grow with technology's parameters in the process of discovering applications to new modes of expression. It is to stress the links between art, science, the humanities, emerging philosophies and the conditions of an ever-changing world. And it is to provide students with tools of discernment, vocabulary, and the skills of analysis and synthesis to become participants in the critical dialogues of our age.

Within this context, students strive to measure up to the best performances modeled for them by history, by their peers and by faculty engaged in vital research.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will be proficient in the use of equipment, techniques and resources.
- Students will be able to participate in dialogue of contemporary art.
- Students will be able to utilize professional practices in the field of the arts.

Special requirements

Successful completion of the Art Foundation curriculum is required before continuing in the Department of Sculpture and Extended Media.

Degree requirements for Sculpture, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
SCPT 211	Basic Sculpture I	4
SCPT 212	Basic Sculpture II	4
SCPT 215	Sophomore Seminar	2
SCPT 311 & SCPT 312	Intermediate Sculpture and Intermediate Sculpture	8
SCPT 411 & SCPT 412	Advanced Sculpture and Advanced Sculpture	8
SCPT 415	Senior Seminar	2
• Additional major requirements		
Directed sculpture elective		4
Directed upper-level sculpture elective		4
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	2
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
Art history (200 level or higher)		3
Art history (300 to 400 level)		6
Non-SCPT studio art electives (200 level or higher) ¹		8
Non-SCPT studio art electives (300 level or higher) ¹		6

Open electives

Select any course.	11
Total Hours	120

1

Non-SCPT studio art electives may be chosen from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS, PAPR, PHTO or THEA.

The minimum number of credit hours required for this degree is 120.

Electives

Course	Title	Hours
Directed sculpture electives		
SCPT 290	Concepts and Issues	2
SCPT 321	Figure Modeling	3
SCPT 322	Flexible Molds	3
SCPT 323	Foundry	4
SCPT 491	Advanced Topics in Sculpture	1-4
SCPT 591	Topics in Sculpture	1-4
Directed upper-level sculpture courses		
SCPT 323	Foundry	4
SCPT 411	Advanced Sculpture	4
SCPT 412	Advanced Sculpture	4
SCPT 417	Seminar in Contemporary Sculpture	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 103	Survey of Art I	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		16
Spring semester		
ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139 or ARTF 138	Project Studio or Project Seminar	1
ARTH 104	Survey of Art II	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3

General education course	3
Term Hours:	16

Sophomore year

Fall semester		Hours
SCPT 211	Basic Sculpture I	4
SCPT 215	Sophomore Seminar	2
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Art history (200 level or higher)		3
General education course		3
Term Hours:		15

Spring semester

SCPT 212	Basic Sculpture II	4
Directed sculpture elective		4
General education course		3
Non-SCPT studio elective ¹		4
Term Hours:		15

Junior year

Fall semester		Hours
SCPT 311	Intermediate Sculpture	4
Art history (300 or 400 level)		3
General education course		3
Non-SCPT studio elective ¹		4
Term Hours:		14

Spring semester

SCPT 312	Intermediate Sculpture	4
Art history (300 or 400 level)		3
General education courses		6
Non-SCPT studio elective ²		3
Term Hours:		16

Senior year

Fall semester		Hours
SCPT 411	Advanced Sculpture	4
SCPT 415	Senior Seminar	2
Non-SCPT studio elective ²		3
Open electives		7
Term Hours:		16

Spring semester

SCPT 412	Advanced Sculpture	4
Directed upper-level SCPT course		4
Open elective		4
Term Hours:		12
Total Hours:		120

1

200-level or higher from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS/MUSC, PAPR, PHTO, THEA

2

300-level or higher from: COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS/MUSC, PAPR, PHTO, THEA

The minimum number of credit hours required for this degree is 120.

Sculpture, minor in

Successful completion of the Art Foundation Program is a prerequisite for the minor in sculpture. The minor consists of a minimum of 18 credits and must include the following courses, in order:

Course	Title	Hours
SCPT 211	Basic Sculpture I	4
SCPT 212	Basic Sculpture II	4
SCPT 311 or SCPT 312	Intermediate Sculpture	4
SCPT 411 or SCPT 412	Advanced Sculpture	4
SCPT upper-level		2-4
Total Hours		18-20

Department of Theatre

Sharon Ott

Associate professor and chair

arts.vcu.edu/theatre (<http://arts.vcu.edu/theatre/>)

The mission of the Department of Theatre is to educate and train students as theatre professionals and/or academicians in the field of performance, design/technology or theatre pedagogy.

In fulfilling its mission, the Department of Theatre provides students with the professional and cultural foundations essential for achieving the highest standards of the art. The department offers three degrees – a Bachelor of Arts, a Bachelor of Fine Arts and a Master of Fine Arts – to which applicants are admitted based on demonstration of ability, genuine interest determined during an interview, and audition and/or portfolio presentation.

In addition to introductory theatre and acting courses for non-majors, the department also serves students throughout the university with offerings in speech communication.

The Department of Theatre employs 23 faculty and staff and enrolls 230 undergraduate and 40 to 50 full-time graduate students. Theatre VCU produces four mainstage productions and numerous graduate and undergraduate directing projects each year.

- Theatre, Bachelor of Arts (B.A.) (p. 443)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production (p. 444)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production (p. 446)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance (p. 448)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/musical theatre (p. 449)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production (p. 451)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production (p. 453)

- Musical theatre, minor in (p. 455)
- Theatre, minor in (p. 455)

Theatre, Bachelor of Arts (B.A.)

The department offers a Bachelor of Arts that may be entered into during the third year. All freshman and transfer students entering the Department of Theatre are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission into a specific degree program (B.F.A. or B.A.) in theatre. The B.A. is designed for students who want a program with a strong emphasis in theatre combined with a strong liberal arts component, and a minor (or other course of directed study) in an area other than theatre.

Student participation in both credit- and noncredit-bearing department activities will be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in the Department of Theatre, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, students work with voice, body and imagination; this practical application, combined with a strong liberal arts component and a minor (or course of directed study), offers a wide field of academic and human experience.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will demonstrate knowledge of theatre history, performance theory, and dramatic literature and its practical artistic application
- Students will complete a minor or other course of directed study to demonstrate broad-based knowledge of the sciences and/or humanities.
- Students will demonstrate successful application of foundational performance and design/technology skills.

Degree requirements for Theatre, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1

• Additional major requirements		
THEA 102	Introduction to Technical Theatre	3
THEA 110	Improvisation	3
THEA 201	Voice and Speech for the Actor I	3
THEA 202	Voice and Speech for the Actor II	3
THEA 203	Movement for the Actor I	3
THEA 204	Movement for the Actor II	3
THEA 213	Acting I	3
THEA 214	Acting II	3
THEA 226	Desktop Audio/Video	2
• Major electives		
THEA courses (300 or 400 level)		6
Ancillary requirements		
Electives (select any courses at 300 or 400 level)		8
Foreign language through the 102 level (by course or placement)		0-6
Open electives		
Select any course.		21-27
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
THEA 100 Technical Production	1
THEA 102 Introduction to Technical Theatre	3
THEA 111 Fundamentals of Performance	3
THEA 211 Introduction to Drama	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations) video for Focused Inquiry I	3
General education course	3
Term Hours:	16

Spring semester

THEA 110 Improvisation	3
THEA 112 Fundamentals of Theatrical Design	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) video for Focused Inquiry II	3
General education course	3
General education course	3
Term Hours:	15

Sophomore year

Fall semester	Hours
THEA 201 Voice and Speech for the Actor I	3
THEA 203 Movement for the Actor I	3
THEA 213 Acting I	3

THEA 226 Desktop Audio/Video	2
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 14

Spring semester

THEA 202 Voice and Speech for the Actor II	3
THEA 204 Movement for the Actor II	3
THEA 214 Acting II	3
General education course	3
General education course	3

Term Hours: 15

Junior year

Fall semester

THEA 251 Rehearsal and Performance I or THEA 252 or Rehearsal and Performance II	3
THEA 307 History of the Theatre	3
THEA elective (300 or 400 level)	3
General education course	3
Open elective	3

Term Hours: 15

Spring semester

THEA 308 History of the Theatre	3
General education course	3
Foreign language 101 (or open elective)	3
Open electives	6

Term Hours: 15

Senior year

Fall semester

THEA 385 Diverse Voices	3
THEA elective (300 or 400 level)	3
Foreign language 102 (or open elective)	3
Open elective	6

Term Hours: 15

Spring semester

THEA 495 Senior Project: Portfolio Review	1
Open electives	14

Term Hours: 15

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A. students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology:

scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a costume designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
• Additional major requirements		
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 105	Advanced Costume Construction	3
THEA 161	Figure Drawing: Superficial Anatomy	2
THEA 162	Figure Drawing: Draping the Human Form	2
THEA 227	Introduction to Theatrical Makeup	3
THEA 228	Introduction to Costume Design	3
THEA 261	Figure Drawing: Media and Technique	2
THEA 262	Figure Drawing: Advanced Media and Technique	2

THEA 309	History of Costumes	3
THEA 310	History of Costumes	3
THEA 321 or THEA 439	Costume Design Studio I Advanced Patterning Techniques I	3
THEA 322 or THEA 442	Costume Design Studio II Advanced Patterning Techniques II	3
THEA 329	Patternmaking for the Theatre	3
THEA 332	Draping for the Theatre	3
THEA 351	Rehearsal and Performance	3
THEA 368	Rendering Techniques	2
THEA 421 or THEA 469	Advanced Costume Design Studio I Advanced Patterning Techniques III	3
THEA 422 or THEA 470	Advanced Costume Design Studio II Advanced Patterning Techniques IV	3
THEA 451	Rehearsal and Performance	3

Ancillary requirements

Directed design electives	6
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Open electives

Select any course.	6
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Total Hours	120
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The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
THEA 104	Costume Construction	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 161	Figure Drawing: Superficial Anatomy	2
THEA 211	Introduction to Drama	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
Term Hours:		17
Spring semester		
THEA 100	Technical Production	1
THEA 103	Stagecraft	3
THEA 105	Advanced Costume Construction	3
THEA 111	Fundamentals of Performance	3
THEA 162	Figure Drawing: Draping the Human Form	2
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
Term Hours:		18
Sophomore year		
Fall semester		

THEA 227	Introduction to Theatrical Makeup	3
THEA 251	Rehearsal and Performance I	3
THEA 261	Figure Drawing: Media and Technique	2
THEA 309	History of Costumes	3
THEA 329	Patternmaking for the Theatre	3
General education course		3

Term Hours: 17

Spring semester

THEA 228	Introduction to Costume Design	3
THEA 262	Figure Drawing: Advanced Media and Technique	2
THEA 310	History of Costumes	3
THEA 332	Draping for the Theatre	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3

Term Hours: 17

Junior year

Fall semester

THEA 307	History of the Theatre	3
THEA 321	Costume Design Studio I or Advanced Patterning Techniques I	3
THEA 439		
THEA 351	Rehearsal and Performance	3
THEA 385	Diverse Voices	3

Term Hours: 12

Spring semester

THEA 308	History of the Theatre	3
THEA 322	Costume Design Studio II or Advanced Patterning Techniques II	3
THEA 442		
THEA 368	Rendering Techniques	2
Directed design elective		3
General education course		3

Term Hours: 14

Senior year

Fall semester

THEA 421	Advanced Costume Design Studio I or Advanced Patterning Techniques III	3
THEA 469		
General education course		3
General education course		3
Open electives		3

Term Hours: 12

Spring semester

THEA 422	Advanced Costume Design Studio II or Advanced Patterning Techniques IV	3
THEA 470		
THEA 451	Rehearsal and Performance	3
THEA 495	Senior Project: Portfolio Review	1
Directed design elective		3

Open elective	3
Term Hours:	13
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A. students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology: scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a lighting designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3

THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
• Additional major requirements		
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 121	Introduction to Drawing	2
or THEA 161	Figure Drawing: Superficial Anatomy	
or THEA 162	Figure Drawing: Draping the Human Form	
THEA 122	Color Theory	2
THEA 217	Theatrical Drafting	2
THEA 221	Introduction to Scene Design	3
THEA 225	Electricity for the Stage	3
THEA 229	Introduction to Lighting Design	3
THEA 237	Advanced Lighting I	3
THEA 324	Practicum in Stage Lighting (taken four semesters)	12
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
THEA 334	Sound Design For Theatre	3
THEA 337	Advanced Lighting Design II	3
or THEA 333	Sound Technology	
THEA 351	Rehearsal and Performance	1-3
THEA 437	Advanced Lighting Design III	3
or THEA 326	Audio Mixing	
THEA 451	Rehearsal and Performance	1-3
Ancillary requirements		
ARTH 103	Survey of Art I	3
or ARTH 104	Survey of Art II	
SPCH 121	Effective Speech	3
Open electives		
Select any course.		9
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours	
THEA 100	Technical Production	1
THEA 103	Stagecraft	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 121	Introduction to Drawing	2
or	or Figure Drawing: Superficial Anatomy	
THEA 161	or Figure Drawing: Draping the Human Form	
or		
THEA 162		
THEA 217	Theatrical Drafting	2
THEA 225	Electricity for the Stage	3

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

Term Hours: 17

Spring semester

THEA 104	Costume Construction	3
THEA 111	Fundamentals of Performance	3
THEA 122	Color Theory	2
THEA 229	Introduction to Lighting Design	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3

Term Hours: 17

Sophomore year

Fall semester

THEA 211	Introduction to Drama	3
THEA 324	Practicum in Stage Lighting	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3

Term Hours: 15

Spring semester

ARTH 103	Survey of Art I	3
or	or Survey of Art II	
ARTH 104		
THEA 237	Advanced Lighting I	3
THEA 324	Practicum in Stage Lighting	3
THEA 334	Sound Design For Theatre	3
General education course		3

Term Hours: 15

Junior year

Fall semester

THEA 221	Introduction to Scene Design	3
THEA 307	History of the Theatre	3
THEA 324	Practicum in Stage Lighting	3
THEA 337	Advanced Lighting Design II	3
or	or Sound Technology	
THEA 333		
General education course		3

Term Hours: 15

Spring semester

THEA 251	Rehearsal and Performance I	3
THEA 308	History of the Theatre	3
THEA 324	Practicum in Stage Lighting	3
THEA 437	Advanced Lighting Design III	3
or	or Audio Mixing	
THEA 326		

General education course	3
Term Hours:	15
Senior year	
Fall semester	
SPCH 121 Effective Speech	3
THEA 351 Rehearsal and Performance	3
General education course	3
Open elective	3
Term Hours:	12
Spring semester	
THEA 385 Diverse Voices	3
THEA 451 Rehearsal and Performance	1-3
THEA 495 Senior Project: Portfolio Review	1
General education course	3
Open electives	6
Term Hours:	14-16
Total Hours:	120-122

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology: scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as an actor
- Demonstrate knowledge of history, theory and literature and their practical application

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
• Additional major requirements		
THEA 102	Introduction to Technical Theatre	3
THEA 110	Improvisation	3
THEA 201	Voice and Speech for the Actor I	3
THEA 202	Voice and Speech for the Actor II	3
THEA 203	Movement for the Actor I	3
THEA 204	Movement for the Actor II	3
THEA 213	Acting I	3
THEA 214	Acting II	3
THEA 226	Desktop Audio/Video	2
THEA 301	Advanced Voice and Speech for the Actor I	3
THEA 302	Advanced Voice and Speech for the Actor II	3
THEA 313	Actor's Studio I	3
THEA 314	Actor's Studio II	3
THEA 315	Audition Technique	3
THEA 335	Advanced Movement and Vocal Techniques	3
THEA 412	Acting for Camera	3
THEA 413	Actor's Studio III	3
or THEA 375	Black Performance Techniques	
or THEA 416	Solo Performance	
or THEA 418	Advanced Acting for Camera	
THEA 419	Professional Preparation	3
• Major electives		
THEA courses (select from 300 or 400 level)		6
Open electives		8
Select any course.		
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
THEA 100 Technical Production	1
THEA 102 Introduction to Technical Theatre	3
THEA 111 Fundamentals of Performance	3
THEA 211 Introduction to Drama	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education course	3
Term Hours:	16

Spring semester

THEA 110 Improvisation	3
THEA 112 Fundamentals of Theatrical Design	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
General education course	3
General education course	3
Term Hours:	15

Sophomore year

Fall semester

THEA 201 Voice and Speech for the Actor I	3
THEA 203 Movement for the Actor I	3
THEA 213 Acting I	3
THEA 226 Desktop Audio/Video	2
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:	14

Spring semester

THEA 202 Voice and Speech for the Actor II	3
THEA 204 Movement for the Actor II	3
THEA 214 Acting II	3
General education course	3
General education course	3
Term Hours:	15

Junior year

Fall semester

THEA 301 Advanced Voice and Speech for the Actor I	3
THEA 307 History of the Theatre	3
THEA 313 Actor's Studio I	3
THEA 335 Advanced Movement and Vocal Techniques	3
General education course	3
Term Hours:	15

Spring semester

THEA 302 Advanced Voice and Speech for the Actor II	3
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THEA 308 History of the Theatre	3
THEA 314 Actor's Studio II	3
THEA 315 Audition Technique	3
General education course	3
Term Hours:	15

Senior year

Fall semester

THEA 385 Diverse Voices	3
THEA 412 Acting for Camera	3
THEA 419 Professional Preparation	3
THEA elective (300 or 400 level)	3
Open elective	3
Term Hours:	15

Spring semester

THEA 251 Rehearsal and Performance I	3
THEA 413 Actor's Studio III	3
or or Black Performance Techniques	
THEA 375 or Solo Performance	
or or Advanced Acting for Camera	
THEA 416	
or	
THEA 418	
THEA 495 Senior Project: Portfolio Review	1
THEA elective (300 or 400 level)	3
Open electives	5
Term Hours:	15
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/musical theatre

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A. students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology: scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a musical theatre actor
- Demonstrate knowledge of history, theory and literature of theatre and musical theatre and their practical applications

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in musical theatre performance

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
• Additional major requirements		
THEA 102	Introduction to Technical Theatre	3
THEA 110	Improvisation	3
THEA 200	Broadway Seminar	1
THEA 201	Voice and Speech for the Actor I	3
THEA 202	Voice and Speech for the Actor II	3
THEA 203	Movement for the Actor I	3
THEA 204	Movement for the Actor II	3
THEA 213	Acting I	3
THEA 214	Acting II	3
THEA 226	Desktop Audio/Video	2
THEA 301	Advanced Voice and Speech for the Actor I	3
THEA 316	Musical Theatre History	3
THEA 317	Musical Theatre Performance I	3
THEA 318	Musical Theatre Performance II	3
THEA 319	Musical Theatre Dance Styles: Landmark Choreographers	2
THEA 417	Cabaret Storytelling	3
THEA 419	Professional Preparation	3
• Major electives		
THEA course (select from 300 or 400 level)		3
Ancillary requirements		
APPL 200	Applied Lessons (repeated for eight credits)	8
APPM 126	Keyboard Fundamentals	1

DANC 121	Tap Technique I	2
or DANC 122	Tap Technique I	
or DANC 151	Jazz Dance Technique I	
or DANC 152	Jazz Dance Technique I	
or DANC 221	Tap Technique II	
or DANC 222	Tap Technique II	
or DANC 255	Hip Hop Dance	
or DANC 256	Hip Hop Dance	
DANC 133	Introduction to Ballet Technique I	2
or DANC 134	Introduction to Ballet Technique II	
MHIS 115	Fundamental Musicianship	2
Open electives		
Select any course.		2
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
APPL 200	Applied Lessons	1
THEA 100	Technical Production	1
THEA 102	Introduction to Technical Theatre	3
THEA 111	Fundamentals of Performance	3
THEA 211	Introduction to Drama	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
Term Hours:		14
Spring semester		
APPL 200	Applied Lessons	1
THEA 110	Improvisation	3
THEA 112	Fundamentals of Theatrical Design	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
General education course		3
Term Hours:		16
Sophomore year		
Fall semester		
APPL 200	Applied Lessons	1
THEA 200	Broadway Seminar	1
THEA 201	Voice and Speech for the Actor I	3
THEA 203	Movement for the Actor I	3
THEA 213	Acting I	3
THEA 226	Desktop Audio/Video	2

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
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Term Hours: 16

Spring semester

APPL 200	Applied Lessons	1
MHIS 115	Fundamental Musicianship	2
THEA 202	Voice and Speech for the Actor II	3
THEA 204	Movement for the Actor II	3
THEA 214	Acting II	3
General education course		3

Term Hours: 15

Junior year

Fall semester

APPL 200	Applied Lessons	1
DANC 133	Introduction to Ballet Technique I	2
or	or Introduction to Ballet Technique II	
DANC 134		
THEA 301	Advanced Voice and Speech for the Actor I	3
THEA 307	History of the Theatre	3
THEA 317	Musical Theatre Performance I	3
General education course		3

Term Hours: 15

Spring semester

APPL 200	Applied Lessons	1
DANC 121	Tap Technique I	2
or	or Tap Technique I	
DANC 122	or Jazz Dance Technique I	
or	or Jazz Dance Technique I	
DANC 151	or Tap Technique II	
or	or Tap Technique II	
DANC 152	or Hip Hop Dance	
or	or Hip Hop Dance	
DANC 221		
or		
DANC 222		
or		
DANC 255		
or		
DANC 256		
THEA 308	History of the Theatre	3
THEA 318	Musical Theatre Performance II	3
General education course		3
General education course		3

Term Hours: 15

Senior year

Fall semester

APPL 200	Applied Lessons	1
APPM 126	Keyboard Fundamentals	1
THEA 316	Musical Theatre History	3
THEA 319	Musical Theatre Dance Styles: Landmark Choreographers	2
THEA 385	Diverse Voices	3
THEA 419	Professional Preparation	3
Open elective		2

Term Hours: 15

Spring semester

APPL 200	Applied Lessons	1
THEA 251	Rehearsal and Performance I	3
THEA 417	Cabaret Storytelling	3
THEA 495	Senior Project: Portfolio Review	1
THEA elective (300 or 400 level)		3
General education course		3

Term Hours: 14

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology: scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a scenic designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production

Course	Title	Hours
	General education (p. 77)	
	Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.	30

Major requirements

Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
Additional major requirements		
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 121	Introduction to Drawing	2
THEA 209 & THEA 216 or THEA 230	Theatrical Rigging and Welding for Theatre Model Building	2-3
THEA 217	Theatrical Drafting	2
THEA 218	Introduction to Scene Painting	3
THEA 221	Introduction to Scene Design	3
THEA 223 & THEA 224	Practicum in Theatre Technology and Practicum in Theatre Technology	6
THEA 229	Introduction to Lighting Design	3
THEA 251	Rehearsal and Performance I	3
THEA 305 or THEA 338	Scenic Design Studio I Technical Direction I	3
THEA 306 or THEA 334 or THEA 347	Scenic Design Studio II Sound Design for Theatre Props Design and Construction	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
THEA 351	Rehearsal and Performance	3
THEA 373	Photo Manipulation for Theatre	3
THEA 405 or THEA 326 or THEA 371	Advanced Scene Design I Audio Mixing Mechanical Design for the Stage	3
THEA 406 or THEA 333 or THEA 345 or THEA 348	Advanced Scenic Design II Sound Technology Technical Direction II Furniture Repair and Upholstery	3
THEA 408 or THEA 409	Advanced Scene Painting Advanced Technical Solutions	3
THEA 451	Rehearsal and Performance	3
Ancillary requirements		
SPCH 121	Effective Speech	3
Open electives		
Select any course.		9-10
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
THEA 100	Technical Production	1
THEA 103	Stagecraft	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 121	Introduction to Drawing	2
THEA 211	Introduction to Drama	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
THEA 104	Costume Construction	3
THEA 217	Theatrical Drafting	2
THEA 223	Practicum in Theatre Technology	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		14
Sophomore year		
Fall semester		
THEA 111	Fundamentals of Performance	3
THEA 221	Introduction to Scene Design	3
THEA 224	Practicum in Theatre Technology	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
General education course		3
Term Hours:		15
Spring semester		
THEA 229	Introduction to Lighting Design	3
THEA 230 or THEA 209 and THEA 216	Model Building or Theatrical Rigging and Welding for Theatre	2-3
THEA 251	Rehearsal and Performance I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		14
Junior year		
Fall semester		
THEA 218	Introduction to Scene Painting	3
THEA 305 or THEA 338	Scenic Design Studio I or Technical Direction I	3
THEA 307	History of the Theatre	3
THEA 373	Photo Manipulation for Theatre	3

General education course	3
Term Hours:	15

Spring semester

SPCH 121	Effective Speech	3
THEA 306	Scenic Design Studio II	3
or	or Sound Design for Theatre	
THEA 334	or Props Design and Construction	
or		
THEA 347		
THEA 308	History of the Theatre	3
General education course		3
General education course		3
Term Hours:		15

Senior year**Fall semester**

THEA 351	Rehearsal and Performance	3
THEA 385	Diverse Voices	3
THEA 405	Advanced Scene Design I	3
or	or Mechanical Design for the Stage	
THEA 371	or Audio Mixing	
or		
THEA 326		
THEA 408	Advanced Scene Painting	3
or	or Advanced Technical Solutions	
THEA 409		
General education course		3
Open elective		3
Term Hours:		18

Spring semester

THEA 406	Advanced Scenic Design II	3
or	or Sound Technology	
THEA 333	or Technical Direction II	
or	or Furniture Repair and Upholstery	
THEA 345		
or		
THEA 348		
THEA 451	Rehearsal and Performance	3
THEA 495	Senior Project: Portfolio Review	1
Open electives		6-7
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production

The Department of Theatre offers a Bachelor of Fine Arts that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). In the B.F.A. students concentrate on areas in performance, including musical theatre, and stage management, as well as three areas of design/technology:

scenic, lighting and costume. (See the individual concentration pages for curricular outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a stage manager
- Demonstrate knowledge of history, theory and literature and their practical application

Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
THEA 100	Technical Production	1
THEA 111	Fundamentals of Performance	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 385	Diverse Voices	3
THEA 495	Senior Project: Portfolio Review	1
• Additional major requirements		
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 201	Voice and Speech for the Actor I	3
or SPCH 121	Effective Speech	
THEA 210	Introduction to Stage Combat	3
or THEA 311	Advanced Movement for the Actor I	
or THEA 312	Advanced Movement for the Actor II	
THEA 218	Introduction to Scene Painting	3
or THEA 219	Fundamentals of Entertainment Technology	
or THEA 221	Introduction to Scene Design	
or THEA 223	Practicum in Theatre Technology	
or THEA 224	Practicum in Theatre Technology	

or THEA 225	Electricity for the Stage	
THEA 227	Introduction to Theatrical Makeup	3
THEA 235	Beginning Stage Management	3
Select two from:		6
THEA 316	Musical Theatre History	
THEA 320	Structural Design for the Stage	
THEA 326	Audio Mixing	
THEA 327	Computer-assisted Design and Drafting for the Theatre	
THEA 333	Sound Technology	
THEA 334	Sound Design For Theatre	
THEA 336	Introduction to Costume Crafts	
THEA 362	Directing II	
THEA 365	Playwriting	
THEA 372	Control Systems for Entertainment	
THEA 373	Photo Manipulation for Theatre	
THEA 325	Intermediate Stage Management	3
THEA 351	Rehearsal and Performance (repeat course for two semesters)	6
THEA 361	Directing I	3
THEA 420	Stage Management Seminar	3
THEA 435	Advanced Stage Management (taken two semesters)	6
THEA 451	Rehearsal and Performance	3
Ancillary requirements		
THEA elective (select 300 or 400 level)		6
Open electives		
Select any course.		10
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

	Hours
Fall semester	
THEA 103 Stagecraft	3
THEA 111 Fundamentals of Performance	3
THEA 235 Beginning Stage Management	3
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations) Play course video for Focused Inquiry I	3
General education course	3
Term Hours:	15
Spring semester	
THEA 100 Technical Production	1
THEA 104 Costume Construction	3
THEA 112 Fundamentals of Theatrical Design	3
THEA 325 Intermediate Stage Management	3

UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) Play course video for Focused Inquiry II	3
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General education course	3
Term Hours:	16

Sophomore year

Fall semester

THEA 211 Introduction to Drama	3
THEA 251 Rehearsal and Performance I	3
THEA 435 Advanced Stage Management	3
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

General education course	3
Term Hours:	15

Spring semester

THEA 201 Voice and Speech for the Actor I or SPCH 121 or Effective Speech	3
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THEA 227 Introduction to Theatrical Makeup	3
THEA 435 Advanced Stage Management	3

General education course	3
Open elective	3

Term Hours:	15
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Junior year

Fall semester

THEA 218 Introduction to Scene Painting or THEA 219 Technology or THEA 221 or Practicum in Theatre Technology or THEA 223 or Electricity for the Stage or THEA 224 or THEA 225	3
THEA 307 History of the Theatre	3
THEA 351 Rehearsal and Performance	3
THEA 420 Stage Management Seminar	3

General education course	3
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Term Hours:	15
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Spring semester

THEA 308 History of the Theatre	3
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THEA 316	Musical Theatre History	3
or	or Structural Design for the Stage	
THEA 320	or Audio Mixing	
or	or Computer-assisted Design and	
THEA 326	Drafting for the Theatre	
or	or Sound Technology	
THEA 327	or Sound Design For Theatre	
or	or Introduction to Costume Crafts	
THEA 333	or Directing II	
or	or Playwriting	
THEA 334	or Control Systems for Entertainment	
or	or Photo Manipulation for Theatre	
THEA 336		
or		
THEA 362		
or		
THEA 365		
or		
THEA 372		
or		
THEA 373		
THEA 351	Rehearsal and Performance	3
THEA 361	Directing I	3
THEA 385	Diverse Voices	3

Term Hours: 15

Senior year

Fall semester

THEA 451	Rehearsal and Performance	3
General education course		3
General education course		3
Open elective		3

Term Hours: 12

Spring semester

THEA 210	Introduction to Stage Combat	3
or	or Advanced Movement for the Actor I	
THEA 311	or Advanced Movement for the Actor II	
or		
THEA 312		

THEA 316	Musical Theatre History	3
or	or Structural Design for the Stage	
THEA 320	or Audio Mixing	
or	or Computer-assisted Design and	
THEA 326	Drafting for the Theatre	
or	or Sound Technology	
THEA 327	or Sound Design For Theatre	
or	or Introduction to Costume Crafts	
THEA 333	or Directing II	
or	or Playwriting	
THEA 334	or Control Systems for Entertainment	
or	or Photo Manipulation for Theatre	
THEA 336		
or		
THEA 362		
or		
THEA 365		
or		
THEA 372		
or		
THEA 373		

3	THEA 495	Senior Project: Portfolio Review	1
	THEA elective (300 or 400 level)		6
	Open elective		4
	Term Hours:		17
	Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Musical theatre, minor in

Any VCU student may declare a minor in musical theatre with approval from the Department of Theatre. The musical theatre minor comprises 18 credits of which a minimum of nine credits must be at the 300 or 400 level. A musical theatre adviser counsels each student about the selection of appropriate courses based on the student's competence and interest. Depending on audition results and course prerequisites, students may select from the following to meet their minor requirements:

Course	Title	Hours
APPL 200	Applied Lessons	1
DANC 133	Introduction to Ballet Technique I	2
DANC 134	Introduction to Ballet Technique II	2
DANC 183	Introduction to Modern Dance Technique	2
DANC 184	Introduction to Modern Dance Technique	2
MHIS 115	Fundamental Musicianship	2
THEA 200	Broadway Seminar	1
THEA 316	Musical Theatre History	3
THEA 317	Musical Theatre Performance I	3
THEA 318	Musical Theatre Performance II	3
THEA 319	Musical Theatre Dance Styles: Landmark Choreographers	2
THEA 417	Cabaret Storytelling	3

Note: An audition or other prerequisites may be required to enroll in some of these courses. See individual course descriptions for details.

Theatre, minor in

Any VCU student may declare a minor in theatre with approval from the Department of Theatre. The minor consists of 18 credits, with nine of those at the 300 or 400 level. The department chair or associate chair will consult with each student interested in the minor in theatre about the selection of appropriate courses based on the student's interests and skills. Students may select from the following courses to meet the requirements of the minor.

Course	Title	Hours
THEA 107	Introduction to Stage Performance	3
THEA 110	Improvisation	3
THEA 112	Fundamentals of Theatrical Design	3
THEA 210	Introduction to Stage Combat	3
THEA 215	Live Theatre Now	3
THEA 227	Introduction to Theatrical Makeup	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
THEA 309	History of Costumes	3

THEA 310	History of Costumes	3
THEA 316	Musical Theatre History	3
THEA 321	Costume Design Studio I	3
THEA 322	Costume Design Studio II	3
THEA 329	Patternmaking for the Theatre	3
THEA 332	Draping for the Theatre	3
THEA 351	Rehearsal and Performance	1-3
THEA 365	Playwriting	3
THEA 385	Diverse Voices	3

School of the Arts in Qatar

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Andrew Mascari

Associate dean for administration

Greet Provoost

Assistant dean for enrollment and registration services

Katherine L. Wildman, Ph.D.

Assistant dean for student affairs

Founded in 1998 as a collaboration between the Qatar Foundation for Education, Science and Community Development and Virginia Commonwealth University School of the Arts, the School of the Arts in Qatar offers the baccalaureate degrees in art history, fashion design, graphic design, interior design, and painting and printmaking, as well as a Master of Fine Art in Design. Its purpose is to provide special educational opportunities preparing graduates for leadership roles in the design professions and art history. Courses emulate those offered on VCU's Monroe Park Campus. Graduates are prepared for exciting careers in these growing fields.

VCU School of the Arts obtained the appropriate approvals from the VCU Board of Visitors and the State Council of Higher Education for Virginia and admitted the first class to what would become VCU School of the Arts in Qatar in fall 1998. SCHEV approved the request in April 2001 and forwarded its recommendation to the governor and General Assembly. The 2002 General Assembly adopted legislation authorizing VCU to establish a campus in Qatar.

Admission

Overview of application requirements

Admission policies for VCU School of the Arts in Qatar are the same as those in effect for VCU School of the Arts in Richmond with minor

exceptions that recognize the culture and heritage of applicants from the Gulf region. Applications must include the requirements as listed below.

1. Applicants must present the Qatari Thanawiya (General Secondary Education Certificate) or equivalent certificate from an accredited high school. Students applying from the British system must submit the results of their IGCSE and A- or AS-level tests. Students applying from the U.S. system must complete a college preparatory curriculum. Students whose grades do not qualify them for admission are recommended to an academic bridge program (see below (p. 457)).
2. Applicants must submit college/university transcripts, if any, of all institutions of higher education attended, course descriptions and a foreign credential assessment by World Education Services
3. Applicants must show proficiency in the English language, as evidenced by official test scores of the Test of English as a Foreign Language or the International English Language Testing System.
4. Applicants must complete the VCUQatar application for admission.
5. An art portfolio is required for applicants to the Bachelor of Fine Arts programs in graphic design, interior design, fashion, or painting and printmaking.
6. Applicants to the Bachelor of Arts program in art history must submit an essay. Topics are specified and vary each year.
7. Applicants must submit a personal statement.
8. A letter of recommendation is required.

All application items listed above are required to be considered for admission. Once submitted, application materials become the confidential property of VCUQatar.

Academic requirements

Admission to the School of the Arts in Qatar is granted on a competitive basis.

- Qatari Thanawiya score must be, at minimum, 80 percent.
- Applicants completing the British curriculum must present at least five IGSC and three AS subject tests with minimum grades of B.
- Applicants completing the U.S. curriculum must present a minimum GPA of 3.0 (on a 4.0 scale).
- Transcripts issued in a language other than English must be accompanied by an official English language translation.

Evaluation of transcripts

VCUQatar course credit may be available to applicants who took or completed International Baccalaureate Diploma program courses, Cambridge International Examinations and/or Advanced Placement tests of the College Entrance Examination Board.

To be considered for course credits, test records and/or transcripts must be submitted prior to the end of the first semester of enrollment at VCUQatar.

Applicants applying for transfer credit from a postsecondary institution must submit official transcripts of all institutions of higher education attended, as well as course descriptions, and a foreign credential evaluation by World Education Services. Faculty and administrative committees determine placement in all upper-level courses after evaluating the student's record and portfolio of course work.

English language proficiency requirements

TOEFL (at minimum)

- 80 (internet-based)
- 213 (computer-based)
- 550 (paper-based)

IELTS (at minimum)

- 6.0 overall band score

Test scores must be sent electronically by the testing center to VCUQatar. Additionally, students must submit a copy of their Student Test Score report. Test scores may not be more than two years older than the date received at VCUQatar. VCUQatar's TOEFL institutional code is 8753.

Mathematics placement test

All incoming students are required to take the mathematics placement test. Placement tests are generally held during the New Student Orientation Program at VCUQatar.

Academic bridge program

Applicants whose grades do not qualify them for admission are recommended to the academic bridge program of the Qatar Foundation. Applicants admitted as dual enrolled students at ABP and VCUQatar are guaranteed admission to VCUQatar after successful completion of the academic bridge program. Dual enrollment status is limited and highly competitive.

First-year incubator program

Academically strong applicants who show promise of artistic talent may be admitted to the first-year incubator program, the pre-Art Foundation Program, at VCUQatar

Academics

Art Foundation Program

Students admitted to the Bachelor of Fine Arts Program at VCUQatar complete the Art Foundation Program during their first year of enrollment. Upon successful completion of the Art Foundation Program, students move in to their major field of study. Students admitted to the Bachelor of Arts program at VCUQatar are directly admitted to the major in art history.

Liberal Arts and Sciences Program

In addition to the courses in the major field of study, students at VCUQatar complete core course work within the Liberal Arts and Sciences Program, which provides academic breadth and depth through courses that promote comprehensive intellectual, cultural and social development.

Honors Program

Students who are academically strong and who are interested in enhanced learning and added intellectual stimulation may apply to become part of the VCUQatar Honors Program (p. 466).

Internships

VCUQatar students are required to complete internship course work for which university credit is offered. These placements are under the supervision of faculty members within the major.

Education abroad

VCUQatar students are strongly encouraged to participate in a one-term exchange or study abroad program or in short-term international field trips offered during breaks or holidays.

Degree requirements

To earn a degree from VCU at VCUQatar, students must complete the stated number of course credits, meet all course requirements for the major and the Liberal Arts and Sciences Program and attain a minimum cumulative GPA of 2.00 and a minimum GPA of 2.00 in the major concentration.

Degree programs

Baccalaureate programs within the School of the Arts in Qatar prepare students for careers in the following departments:

- Art history (p. 457)
- Fashion design (p. 459)
- Graphic design (p. 460)
- Interior design (p. 462)
- Painting and printmaking (p. 464)
- Islamic art history, minor in – VCU Qatar Campus (p. 466)

Art History, Bachelor of Arts (B.A.) [VCUQ]

Radha Dalal, Ph.D.

Assistant professor and interim director

[qatar.vcu.edu/arthistory](https://www.qatar.vcu.edu/arthistory/) (<https://www.qatar.vcu.edu/arthistory/>)

The Bachelor of Arts in Art History is a liberal arts program composed of an academic course of study exposing the student to the scholarship, theoretical perspectives and research methods of not only the history of art, but related disciplines in the humanities. Courses focus on cultures, historical periods and regions. The program also includes possibilities for directed research projects as well as museum internships. This curriculum provides students the best possible background for future graduate work in art history.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a command of art historical terminology and the ability to identify key works of art in relationship to historical contexts
- Demonstrate the ability to interpret works of art in relationship to the historical, cultural and/or geographical contexts in which they were made
- Demonstrate the ability to read critically and apply art historical research methods in research papers
- Demonstrate the ability to conduct rigorous research and write papers that incorporate visual analysis and current scholarship in the interpretation of artworks

Special requirements

Art history majors must earn a minimum grade of C in each ARTH course to be applied to the curriculum requirements. In addition to the regular admissions requirements of VCU School of the Arts in Qatar, applicants

to the art history program must submit the following: 1) official SAT or ACT scores and 2) an essay as a writing sample with their online application. Details on the essay topic and length are found on the VCU-Q online application process. For additional information please see the department's website (<http://arts.vcu.edu/arhistory/>).

Degree requirements for Art History, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
ARTH 260	Islamic Art Survey	3
ARTH 292	Writing for Art History	3
ARTH 390	Art Historical Methods	3
ARTH 490	Senior Seminar in Art History	3
• Additional major requirements		
ARTH 300	Prehistoric and Ancient Art and Architecture	3
or ARTH 305	Classical Art and Architecture	
ARTH 302	Introduction to Museums	3
ARTH 311	Early Islamic Art in a Global Context	3
ARTH 312	Islamic Art in a Global Context 1200 to 1600 CE	3
ARTH 321	Islamic Art in a Global Context 1600 to 1800 CE	3
ARTH 465	Islamic Art in a Global Context 1800 to 1900 CE	3
ARTH 466	Modern and Contemporary Art in the Middle East	3
• Major electives		
ARTH elective (select any one additional ARTH course)		3
Ancillary requirements		
UNIV 101	Introduction to the University	1
ARBC 202	Intermediate Arabic II	3
or FREN 202	Intermediate French II	
or GRMN 202	Intermediate German II	
or ITAL 202	Intermediate Italian II	
or SPAN 202	Intermediate Spanish II	
Fine arts studio (CRAF, SCPT, PAPP or PHTO)		3
HIST (any)		9
HIST 3XX (any 300-level HIST course)		3
Humanities 3XX (AFAM, AMST, ANTH, ENGL, GSWS, HUMS, HUSI, INTL, PHIL, PSYC, POLI, RELS, SCTS, SOCY, WRLD)		9
Open electives		
Select any course. ¹		21
Total Hours		121

includes language (101,102 and 201, if needed)

The minimum number of credit hours required for this degree is 121.

Freshman year

Fall semester		Hours
ARTH 103	Survey of Art I	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
video for Focused Inquiry I		
HIST (any)		3
General education courses		6
Term Hours:		16

Spring semester

ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
video for Focused Inquiry II		
HIST (any)		3
General education courses		6
Term Hours:		15

Sophomore year

Fall semester		Hours
ARBC 101	Beginning Arabic I (or open elective if language requirement is met)	3
or FREN 101	or Beginning French I	
or GRMN 101	or Beginning German I	
or ITAL 101	or Beginning Italian I	
or SPAN 101	or Beginning Spanish I	
ARTH 260	Islamic Art Survey	3
ARTH 300	Prehistoric and Ancient Art and Architecture	3
or ARTH 305	or Classical Art and Architecture	
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
HIST (any)		3
Term Hours:		15

Spring semester

ARBC 102	Beginning Arabic II (or open elective if language requirement is met)	3
or FREN 102	or Beginning French II	
or GRMN 102	or Beginning German II	
or ITAL 102	or Beginning Italian II	
or SPAN 102	or Beginning Spanish II	
ARTH 292	Writing for Art History	3
ARTH 311	Early Islamic Art in a Global Context	3
HIST 3XX (any 300-level HIST course)		3

General education course		3
Term Hours:		15
Junior year		
Fall semester		
ARBC 201	Intermediate Arabic I (or open elective if language requirement is met)	3
or		
FREN 201	or Intermediate French I	
or		
GRMN 201	or Intermediate German I	
or		
ITAL 201	or Intermediate Italian I	
or		
SPAN 201	or Intermediate Spanish I	
ARTH 302	Introduction to Museums	3
ARTH 312	Islamic Art in a Global Context 1200 to 1600 CE	3
Fine arts studio (CRAF, SCPT, PAPP or PHTO)		
General education course		3
Term Hours:		15
Spring semester		
ARBC 202	Intermediate Arabic II	3
or		
FREN 202	or Intermediate French II	
or		
GRMN 202	or Intermediate German II	
or		
ITAL 202	or Intermediate Italian II	
or		
SPAN 202	or Intermediate Spanish II	
ARTH 321	Islamic Art in a Global Context 1600 to 1800 CE	3
ARTH 390	Art Historical Methods	3
General education course		
Humanities 3XX (AFAM, AMST, ANTH, ENGL, GSWS, HUMS, HUSI, INTL, PHIL, PSYC, POLI, RELS, SCTS, SOCY, WRLD)		
Term Hours:		15
Senior year		
Fall semester		
ARTH 465	Islamic Art in a Global Context 1800 to 1900 CE	3
ARTH elective		
Humanities 3XX (AFAM, AMST, ANTH, ENGL, GSWS, HUMS, HUSI, INTL, PHIL, PSYC, POLI, RELS, SCTS, SOCY, WRLD)		
Open electives		
Term Hours:		15
Spring semester		
ARTH 466	Modern and Contemporary Art in the Middle East	3
ARTH 490	Senior Seminar in Art History	3
Humanities 3XX (AFAM, AMST, ANTH, ENGL, GSWS, HUMS, HUSI, INTL, PHIL, PSYC, POLI, RELS, SCTS, SOCY, WRLD)		
Open electives		
Term Hours:		15
Total Hours:		121

The minimum number of credit hours required for this degree is 121.

Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design [VCUQ]

Christopher Fink

Assistant professor and chair

The fashion design curriculum offers technical and design courses that provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. A fashion industry internship is required.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Utilize problem-solving skills: Apply investigative and research skills in the completion of studio projects
- Implement industry-standard computer technology.
- Demonstrate professional visual and oral presentation skills
- Understand the global nature of the fashion industry

Degree requirements for Fashion, Bachelor of Fine Arts (B.F.A.) with fashion design concentration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FASH 201	Construction Techniques	3
FASH 203 & FASH 204	Patternmaking I and Patternmaking II	6
FASH 205 & FASH 206	Fashion Drawing I and Fashion Drawing II	6
FASH 290	Textiles for the Fashion Industry	3
FASH 301	Design I Studio: Draping (taken twice)	6
FASH 302	Design I Studio: Tailoring (taken twice)	6
FASH 303	Design Theory and Illustration I	3
FASH 304	Design Theory and Illustration II	3
FASH 319	Contemporary Fashion	3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
FASH 404	Portfolio	4
• Additional major requirements		
FASH 401	Design II Studio (taken twice)	6
FASH 402	Design II Studio (taken twice)	6
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3

ARTF 132	Surface Research	3	
ARTF 133	Space Research	3	
ARTF 134	Time Studio	3	
ARTF 139	Project Studio	2	
or ARTF 138	Project Seminar		
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6	
Additional requirements			
Design history elective			
FASH 320	Twenty-first Century Fashion (or art history elective)	3	
UNIV 101	Introduction to the University	1	
Electives			
Select any course at the 200 level or higher.			3
Select any courses at the 300 level or higher.			6
Total Hours			121

The minimum number of credit hours required for this degree is 121.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
Term Hours:		17

Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
Term Hours:		16

Sophomore year

Fall semester		
FASH 201	Construction Techniques	3

FASH 203	Patternmaking I	3
FASH 205	Fashion Drawing I	3
FASH 290	Textiles for the Fashion Industry	3
General education course		3
Term Hours:		15

Spring semester

FASH 204	Patternmaking II	3
FASH 206	Fashion Drawing II	3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Elective (200 level or higher)		3
Term Hours:		15

Junior year

Fall semester

FASH 301	Design I Studio: Draping	3
FASH 302	Design I Studio: Tailoring	3
FASH 303	Design Theory and Illustration I	3
FASH 319	Contemporary Fashion	3
General education course		3
Term Hours:		15

Spring semester

FASH 301	Design I Studio: Draping	3
FASH 302	Design I Studio: Tailoring	3
FASH 304	Design Theory and Illustration II	3
FASH 320	Twenty-first Century Fashion (or art history elective)	3
General education course		3
Term Hours:		15

Senior year

Fall semester

FASH 401	Design II Studio	3
FASH 402	Design II Studio	3
Electives (300 level or higher)		6
General education course		3
Term Hours:		15

Spring semester

FASH 401	Design II Studio	3
FASH 402	Design II Studio	3
FASH 404	Portfolio	4
General education course		3
Term Hours:		13
Total Hours:		121

The minimum number of credit hours required for this degree is 121.

Graphic Design, Bachelor of Fine Arts (B.F.A.) [VCUQ]

Astrid Kensinger

Associate professor and chair

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Prioritize making as a primary mode of investigation and exchange:** Students will engage with labor as a physical and emotional activity that is fundamental to the design process. They will understand and practice design as a process that is not driven by assumptions, presumptions or preconceptions.
- **Understand that research is an essential component of the design process:** Students will employ research as a critical lens to understand context and to validate the relevance of design decisions and processes.
- **Develop capacity to design in collaboration with others:** Students will become equipped to participate in broad and diverse exchanges that expand the range and depth of design processes that are oriented to nonhierarchical learning and making.
- **Develop cultural literacy:** Students will be cognizant of forces that affect the formation and reinforcement of meaning and value. These forces define who we are and how the decisions we make can cultivate the dignity of individuals and communities.

Degree requirements for Bachelor of Fine Arts, Graphic Design (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
GDES 220	Design Practices	4
GDES 221	Core Studio I	4
GDES 222	Core Studio II	4
GDES 231	Theory Inquiry	3
GDES 321	Core Studio III	4
GDES 322	Core Studio IV	4
GDES 331	Precedents Inquiry	3
GDES 380	Multi Studio I (taken twice)	8
GDES 398	Dialogues (taken six semesters)	6
GDES 431	Critical Inquiry	4
GDES 440	Synthesis	6
GDES 480	Multi Studio II	2
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
UNIV 101	Introduction to the University	1
GDES electives (300 to 500 level)		8

Open electives	
Select any course.	12
Total Hours	123

The minimum number of credit hours required for this degree is 123.

Electives

Course	Title	Hours
GDES 302	Book Arts	4
GDES 308	Web Design	4
GDES 356	Studio Management	4
GDES 391	Lecture Topics in Design	1-3
GDES 392	Research/Individual Study	2-4
GDES 403	Design Activism	4
GDES 404	Typeface Design	4
GDES 408	Advanced Web Design	3
GDES 412	Typographic Systems	4
GDES 413	Package Design	4
GDES 414	Exhibition and Environmental Graphic Design	4
GDES 417	Interdisciplinary Team Design	3
GDES 418	Design Center	3-9
GDES 445	Problem Seeking	3
GDES 481	Practicum	4
GDES 491	Studio Topics in Design	1-6

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
Term Hours:		17
Spring semester		
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 104	Survey of Art II	3

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

Sophomore year**Fall semester**

GDES 220	Design Practices	4
GDES 221	Core Studio I	4
GDES 231	Theory Inquiry	3
or or Precedents Inquiry		
GDES 331		
GDES 398	Dialogues	1
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15

Spring semester

GDES 222	Core Studio II	4
GDES 380	Multi Studio I	4
GDES 398	Dialogues	1
General education course		3
Open elective		3
Term Hours:		15

Junior year**Fall semester**

ENGL 215	Reading Literature (satisfies general education BOK for humanities/fine arts and/or AOI for creativity, innovation and aesthetic inquiry)	3
GDES 321	Core Studio III	4
GDES 331	Precedents Inquiry (or GDES 231 if not already taken)	3
GDES 398	Dialogues	1
GDES elective (300-500 level)		4
Term Hours:		15

Spring semester

GDES 322	Core Studio IV	4
GDES 380	Multi Studio I	4
GDES 398	Dialogues	1
General education course		3
Open elective		3
Term Hours:		15

Senior year**Fall semester**

GDES 398	Dialogues	1
GDES 431	Critical Inquiry	4
GDES elective (300-500 level)		4
General education course		3
Open elective		3
Term Hours:		15

Spring semester

GDES 398	Dialogues	1
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GDES 440	Synthesis	6
GDES 480	Multi Studio II	2
General education course		3
Open elective		3
Term Hours:		15
Total Hours:		123

The minimum number of credit hours required for this degree is 123.

Interior Design, Bachelor of Fine Arts (B.F.A.) [VCUQ]

Liam Colquhoun

Assistant professor and interim chair

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. **Students will demonstrate professional values.** The students will demonstrate professional values that address client and user needs in response to the built environment, professional ethics, environmental ethics and the role of sustainability in the practice of interior design. Students will demonstrate an understanding of a global perspective approach to thinking and problem-solving (viewing design with awareness and respect for cultural and social differences of people; understanding issues that affect the sustainability of the planet; understanding of the implications of conducting the practice of design within a world market). Students will demonstrate critical and analytical thinking, creative thinking, and the ability to think visually and volumetrically. Students will demonstrate professional discipline (i.e., time management, organizational skills) and active listening skills. Students will understand the importance of community and public service.
2. **Student work will demonstrate design fundamentals.** Students will demonstrate knowledge of design fundamentals including design elements and principles, color principles, theories and systems, theories of design and composition, and principles and theories of lighting design. Students will demonstrate an understanding of the theories of human behavior in the built environment including human factors (ergonomics, anthropometrics), the relationship between human behavior and the built environment, and an understanding of the principles of sustainability. Students will demonstrate knowledge of the history of art, architecture and design.
3. **Student work will demonstrate knowledge of interior design.** Students will demonstrate knowledge and application of the design process and two- and three-dimensional design elements and principles in the development of the spatial envelope. Student work will demonstrate programming skills, including problem identification, identification of client and user needs, and information gathering research and analysis (functional requirements, code research, sustainability issues, etc.). Student work will demonstrate competent schematic design, concept development and problem-solving (concept statements, conceptual drawings, space planning). Student work will demonstrate competent design development skills (selection of finishes and materials; furniture selection and plan, plans, elevations, sketches, and study models; luminaires and lighting sources; design justification solutions in relation to the program and concept; appropriate selection and application of decorative architectural elements). Student work will demonstrate

competent skills in preparing drawings, schedules and specifications as an integrated system in a single project. Student work should demonstrate an understanding of appropriate selection and application of art and accessories, the ability to custom design interior elements, way-finding methods and graphic identification. Student work must demonstrate understanding that design solutions affect and are impacted by building systems and interior materials. Students must demonstrate understanding of the impact of laws, codes, regulations, standards and practices that protect the health, safety and welfare of the public.

4. **Student work will demonstrate effective communication.** Student work will demonstrate competence in drafting and lettering, both manual and computer-aided techniques; illustrative drawing; and presentation of color, materials and furnishings. Students must express ideas clearly in oral presentations and critiques; communicate clearly in writing of specifications, schedules, and contracts and other business-related documents, such as project programs, concept statements, reports, research papers, resumes and correspondence. Student work must demonstrate the student's ability to successfully render the design intent using two- and three-dimensional methods (manual and computer-aided).
5. **Students will demonstrate a foundation in business and professional practices.** Students will demonstrate understanding of project management (estimating, budget management, contract administration, information management, conflict resolution, assessment processes including post-occupancy evaluation). Students must demonstrate knowledge of licensing and registration requirements for interior designers and professional design organizations, Students must demonstrate understanding of basic business computer applications (word processing, spreadsheets) and business procedures (marketing, strategic planning).

Special requirements

For consideration and entry into the interior design major, students must successfully complete all foundation studio courses and submit a portfolio of their work for review.

Degree requirements for Interior Design, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
IDES 201	Introductory Interior Design Studio I	4
IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 301	Interior Design Studio I	4
IDES 302	Interior Design Studio II	4
IDES 311	Advanced Interior Graphics I	3
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3

IDES 323	Light and Color in Interior Environments	3
IDES 400	Senior Interior Design Studio I	4
IDES 401	Senior Interior Design Studio II	4
IDES 422	Building Systems	3
IDES 441	Senior Design Seminar I	2
IDES 442	Senior Design Seminar II	2
IDES 493	Interior Design Internship	3
• Additional major requirements		
IDES 330	The Business of Design	3
IDES 370	Design History: 20th and 21st Centuries	3
IDES 421	Construction Documents	3
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
UNIV 101	Introduction to the University	1
Art/design elective (Any ARTS, CRAF, GDES, FASH, IDES or PAPP course)		3
Total Hours		121

The minimum number of credit hours required for this degree is 121.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		
ARTH 103	Survey of Art I	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for	
Focused Inquiry I		
General education course		3
Term Hours:		17
Spring semester		
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	1
or	or Project Seminar	
ARTF 138		

ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

Sophomore year**Fall semester**

IDES 201	Introductory Interior Design Studio I	4
IDES 211	Interior Graphics I	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		16

Spring semester

IDES 202	Introductory Interior Design Studio II	4
IDES 212	Interior Graphics II	3
IDES 311	Advanced Interior Graphics I	3
IDES 321	Interior Materials and Textiles	3
General education course		3
Term Hours:		16

Junior year**Fall semester**

IDES 301	Interior Design Studio I	4
IDES 312	Advanced Interior Graphics II	3
IDES 323	Light and Color in Interior Environments	3
IDES 422	Building Systems	3
General education course		3
Term Hours:		16

Spring semester

IDES 302	Interior Design Studio II	4
IDES 370	Design History: 20th and 21st Centuries	3
IDES 421	Construction Documents	3
General education course		3
Term Hours:		13

Senior year**Fall semester**

IDES 330	The Business of Design	3
IDES 400	Senior Interior Design Studio I	4
IDES 441	Senior Design Seminar I	2
General education course		3
General education course		3
Term Hours:		15

Spring semester

IDES 401	Senior Interior Design Studio II	4
IDES 442	Senior Design Seminar II	2
IDES 493	Interior Design Internship	3

Art/design elective (any ARTS, CRAF, GDES, FASH, IDES or PAPER course)	3
Term Hours:	12
Total Hours:	121

The minimum number of credit hours required for this degree is 121.

Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) [VCUQ]

Aissa H. Deebi, Ph.D.

Associate professor and director

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

PLO 1 – Technical skill: Students will achieve proficiency of tools, techniques and materials used in their media area. Students are expected to achieve technical proficiency in painting and printmaking and possess the skill to translate their creative ideas through studio practice.

PLO 2 – Creativity: Students should develop the capacity to combine or synthesize existing ideas, images or expertise in original ways. Students should be able to think, react and work in an imaginary way characterized by a high degree of innovation, divergent thinking, problem solving, risk taking and the embracing of contradictions. Students are expected to develop personal voices as artists based on an awareness of social, historical and critical issues.

PLO 3 – Critical and conceptual thinking: Students should demonstrate comprehensive exploration of issues, ideas, artifacts and practices before accepting or formulating an opinion or conclusion. Students have the ability to think critically and to articulate their ideas via conversation, public speaking and writing.

PLO 4 – Professional practice: Students should possess the professional skills required by contemporary artists and those working within the field of creative practices. Student should be well versed the [sic] necessary skills to promote their work, document their work and liaise with other professionals. Students comprehend the potential impact of contemporary art on culture.

Special requirements

- Studio courses are designed to be taken in the following sequence: 200 level (basic), 300 level (intermediate) and 400 level (advanced). Instructors may ask students to withdraw from a course if they lack the appropriate background of knowledge and experience.

Degree requirements for Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)

Course	Title	Hours
General education (p. 77)		

Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.	30
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Major requirements

- Major core requirements

PAPR 201	Painting From Observation	4
PAPR 231	Drawing from Observation	4

PAPR 290	Concepts and Issues	2
PAPR 390	Junior Seminar	2
PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2
• Additional major requirements		
PAPR 211	Print Media I	4
PAPR 301	Painting Strategies (whichever is not taken as an elective)	4
or PAPR 311	Print Media II	
PAPR 304	Paint Practice and Theory	4
or PAPR 314	Print Practice and Theory	
• Major electives		
PAPR 300- to 400-level courses in painting, printmaking or drawing		12
Ancillary requirements		
Art Foundation Program		
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project Studio	2
or ARTF 138	Project Seminar	
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Additional requirements		
UNIV 101	Introduction to the University	1
ARTH electives		9
Studio electives (outside PAPR) ¹		8
Open electives		
Select any course.		11
Total Hours		121

1

Studio courses outside painting and printmaking include: CRAF, SCPT, KINE, PHTO or GDES.

The minimum number of credit hours required for this degree is 121.

Electives

Course	Title	Hours
Intermediate printmaking electives		
PAPR 311	Print Media II	4
PAPR 315	Printmaking, Intermediate (Etching)	4
PAPR 317	Printmaking, Intermediate (Lithography)	4
PAPR 319	Printmaking, Intermediate (Screenprinting)	4
Advanced painting electives		
PAPR 301	Painting Strategies	4
PAPR 401	Painting Investigations	4
Advanced drawing electives		
PAPR 331	Experiments in Drawing	4
PAPR 431	Drawing and the Model	4
Advanced printmaking electives		
PAPR 409	Large Format Digital Printing	4

PAPR 415	Printmaking, Advanced (Etching)	4
PAPR 417	Printmaking, Advanced (Lithography)	4
PAPR 419	Printmaking, Advanced (Screenprinting)	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
ARTF 131 Drawing Studio	3
ARTF 132 Surface Research	3
ARTF 139 Project Studio	1
or Project Seminar	
ARTF 138	
ARTH 103 Survey of Art I	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education course	3
Term Hours:	17

Spring semester

ARTF 133 Space Research	3
ARTF 134 Time Studio	3
ARTF 139 Project Studio	1
or Project Seminar	
ARTF 138	
ARTH 104 Survey of Art II	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
General education course	3
Term Hours:	16

Sophomore year

Fall semester	Hours
PAPR 201 Painting From Observation	4
PAPR 231 Drawing from Observation	4
PAPR 290 Concepts and Issues	2
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course	3
Term Hours:	16
Spring semester	Hours
PAPR 211 Print Media I	4
General education course	3
General education course	3
Open elective	4
Term Hours:	14

Junior year

Fall semester

PAPR 301 or PAPR 311	Painting Strategies or Print Media II	4
ARTH elective		6
Open electives		4
Term Hours:		14
Spring semester		
PAPR 304 or PAPR 314	Paint Practice and Theory or Print Practice and Theory	4
PAPR 390	Junior Seminar	2
PAPR 300- or 400-level course		4
Studio elective (outside PAPR)		4
Term Hours:		14
Senior year		
Fall semester		
ARTH elective		3
PAPR 300- or 400-level courses		4
General education course		3
Open elective		3
Studio elective (outside PAPR)		4
Term Hours:		17
Spring semester		
PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2
PAPR 300- or 400-level course		4
General education course		3
Term Hours:		13
Total Hours:		121

The minimum number of credit hours required for this degree is 121.

Islamic art history, minor in – VCU Qatar Campus

A minor in Islamic art history consists of 18 credits, which must include:

Course	Title	Hours
ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3
ARTH 260	Islamic Art Survey	3
Select nine credits from any ARTH course at the 300 or 400 level that is open to non-majors ¹		9
Total Hours		18

1

Use the courses tab above to access a link to a list of all ARTH courses.

Only courses in which a student earns a minimum grade of C may be applied to the minor. A student may apply for the art history minor after successful completion of ARTH 103 or ARTH 104.

Students who have completed at least six credits of the 300-level courses required in the minor may be allowed into ARTH 465 or ARTH 466 with the permission of the department.

Note: This minor is offered only to students on the VCU Qatar Campus.

Honors Program at VCUQatar

Jesse Ulmer

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Website: [qatar.vcu.edu/honors-program](http://www.qatar.vcu.edu/honors-program/) (<http://www.qatar.vcu.edu/honors-program/>)

The Honors Program at VCUQatar is designed to fulfill the needs of talented and academically high-achieving undergraduate students. The program offers an advanced liberal education that cultivates interdisciplinary research, creativity, multicultural literacy, self-development, experiential learning and community-building. Students are expected to complete a number of honors-level courses in a diverse range of disciplines that will help prepare them for careers or graduate-level learning. The program provides students with a foundation in social and behavioral sciences, natural and physical sciences, the humanities, fine arts and design. Students will engage in advanced undergraduate research to produce innovative work that integrates concepts and approaches from multiple disciplines, a process that requires risk-taking and the pursuit of novel methods. Honors students are expected to learn how to adapt to changing environments and utilize emerging technologies. Moreover, honors students are expected to develop advanced levels of multicultural literacy and to develop the capacity to positively impact whatever groups and communities they find themselves in. These expectations form the objectives of the program and will serve as a basis for assessment.

In addition, the context and mission of the program represents a synthesis of the many institutions and cultures that surround and support it. As part of the VCU Honors College in Richmond, Virginia, the Honors Program at VCUQatar offers students opportunities to exchange ideas, ask questions and explore values; as part of the VCU School of the Arts, the program champions artistic excellence and self-expression; and as part of VCUQatar and Qatar Foundation, the program strives to contribute to the development of Qatar through creative innovation and collaboration. The end result of this unique convergence is an honors program deeply committed to developing cultural diversity and interdisciplinary study in a context of academic and creative excellence.

Admission

Students from all undergraduate majors offered at VCUQatar are eligible to apply to the Honors Program if they meet the minimum criteria, which include a minimum 3.5 grade point average, a letter of recommendation from a VCUQatar faculty member and the submission of an application essay.

Students may apply to the Honors Program at VCUQatar as early as the first semester of their freshman year. Students must submit an online application to the VCU Honors College. Admission decisions are made jointly by The Honors College in Richmond and the Honors Program at VCUQatar.

Graduation with University Honors

To graduate with the distinction of University Honors, students admitted to the program must complete a total of 24 honors credits:

- Liberal arts and sciences courses (15 credits)

- Honors social and behavioral sciences: 3 credits
- Honors natural and physical sciences: 3 credits
- Honors literacy and critical thinking: 6 credits
- Honors research methods: 3 credits
- Honors experiential learning project (3 credits)
- Honors course work in major course of study (6 credits)

To graduate with honors, members of the Honors Program at VCUQatar must meet the following criteria: 3.5 overall GPA (including every course **attempted**); 3.2 honors GPA (including every honors course **attempted**); the completion of the above curriculum; and successful completion and submission of an honors dossier.

Overall, students are encouraged to consult an Honors Program adviser to explore additional ways to earn honors credit that include honors independent study and non-honors to honors course contract options. More detailed information on these options can be found on The Honors College (<http://honors.vcu.edu/>) website.

Guidelines and regulations

To continue as a member of the Honors Program at VCUQatar, students must maintain a minimum cumulative GPA of 3.5. Should an honors student's cumulative GPA fall below 3.5, but not below 3.0, the student may be placed on honors probation for one semester.

SCHOOL OF BUSINESS

A close-knit community within a leading urban, public university, the VCU School of Business enrolls 4,000 students in a wide range of bachelor's, master's, certificate and doctoral programs. The school ranks in the top 5 percent of business schools worldwide due to its accreditation by AACSB International. From its founding in 1937, the school has developed strong connections with the business community in Richmond and beyond, with students actively engaged in internships, corporate projects and learning from executives.

Strategic plan

In 2015-16, the VCU School of Business launched a bold strategic plan, EPIC, to build on its strengths and ensure that the school's students are prepared to thrive in a changing world. As the business landscape grows increasingly complex, companies in every industry need creative solutions. Leaders are seeking to hire graduates who have a solid foundation in their chosen business discipline — combined with the ability to bring fresh thinking and a creative approach to solving problems.

Our vision

Drive the future of business through the power of creativity

Our mission

To be a dynamic hub of business education and research, fueled by creativity and a commitment to preparing students to lead in a complex world

EPIC Pillars

Experiential learning, Problem-solving curricula, Impactful research, Creative culture

The School of Business, its programs and faculty have received national recognition from top publications such as U.S. News & World Report, the Princeton Review, Bloomberg Businessweek, The CEO Magazine and Advertising Age. In 2014, the top-ranked VCU Brandcenter joined the School of Business. Graduates from all programs are welcomed into the VCU Business Alumni Society.

Administration

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(804) 828-1595
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Associate dean for academic quality and accreditation

Jana P. McQuaid, Ed.D.
Assistant dean for student resources and enrollment management

Nanda K. Rangan, Ph.D.

Associate dean for international and strategic initiatives

Accreditation

The School of Business is accredited by the Association to Advance Collegiate Schools of Business, which accredits programs of professional education in business at the collegiate level. AACSB International accreditation represents the highest standard of achievement for business schools worldwide. Institutions that earn accreditation confirm their commitment to quality and continuous improvement through a rigorous and comprehensive peer review. AACSB International accreditation is the hallmark of excellence in management education.

The School of Business is the first school of business in the nation to gain accreditation from the Accreditation Board for Engineering and Technology for its undergraduate program in information systems.

Financial aid, scholarships and awards

Scholarships and awards

In addition to university scholarships, business students may apply and compete for scholarships awarded through School of Business endowed scholarship funds or through the various School of Business academic programs. For detailed information on scholarships and awards, visit the School of Business website.

Assistantships

The School of Business offers a limited number of graduate assistantships to full-time students for the academic year. For further information, write to the Graduate Studies in Business Office.

Graduate students also are eligible for funds administered under the National Defense Loan and college work-study programs. For further information, please visit the Division of Student Affairs website (<https://students.vcu.edu/student-jobs/graduate-assistant-positions/>).

Undergraduate information

Undergraduate programs

The school offers undergraduate baccalaureate degree programs in accounting, business, economics, finance, financial technology, information systems, real estate and marketing, each of which earns a Bachelor of Science.

Post-baccalaureate undergraduate certificates in accounting and information systems are also offered, as well as minors in entrepreneurship, general business, human resource management, marketing insights and real estate.

A minor in economics is offered by the College of Humanities and Sciences. Business majors (other than economics) are eligible for this minor. See the program listing for more information (p. 311).

Programs, degree levels and specializations are outlined below.

Bachelor of Science

- Accounting
- Business
 - Finance
 - Human resource management

- Management
 - Business administration
 - Entrepreneurship
 - International management
- Risk management and insurance
- Supply chain management and analytics
- Economics
- Finance
 - Risk management and insurance
- Financial technology
 - Actuarial science
 - Financial engineering
- Information systems
- Marketing
 - General marketing
 - Marketing communication and analytics
 - Personal selling and business marketing
 - Product and brand management
- Real estate

Post-baccalaureate undergraduate certificates

- Accounting
- Information systems

Minors

- Entrepreneurship
- General business
- Human resource management
- Marketing insights
- Real estate

Shared undergraduate business curriculum

The following programs have certain elements that are shared among them.

- **Accounting, Bachelor of Science (B.S.)**
- **Business, Bachelor of Science (B.S.), human resource management, management/business administration, management/entrepreneurship, management/international management, and supply chain management and analytics concentrations**
- **Finance, Bachelor of Science (B.S.), no concentration and risk management and insurance concentration**
- **Economics, Bachelor of Science (B.S.)**
- **Information Systems, Bachelor of Science (B.S.)**
- **Marketing, Bachelor of Science (B.S.), general marketing, marketing communication and analytics, personal selling and business marketing, and product and brand management concentrations**
- **Real Estate, Bachelor of Science (B.S.)**

Learning goals

The mission of the shared undergraduate business curriculum, in conjunction with universitywide general education requirements, is to

provide students the knowledge, skills, opportunities and experiences needed as a framework for the various major programs of study.

The goals of the shared curriculum are:

- Effective communication
- A broad-based knowledge of business functions and processes
- Quantitative skills
- Critical-thinking and development of creative solutions to business problems
- A solid foundation for making responsible and ethical business decisions

Student learning outcomes

Upon completing this program, students will know how to do the following:

- Communicate successfully in a variety of business situations
- Demonstrate understanding of the basic functions of business
- Use data to support decision-making
- Lead and work effectively in teams
- Apply creative problem-solving techniques to business problems
- Use ethical principles while making business decisions

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

School of Business students cannot use the pass/fail grading policy for the following courses: ACCT 203, ACCT 204, BUSN 212, ECON 211, FIRE 311, INFO 360, MATH 200, MGMT 303, MGMT 310, MGMT 434,

MKTG 301, SCMA 301, SCMA 320 or any course that counts toward the calculation of the major GPA. Students should check with their academic adviser before taking the pass/fail grading option.

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
Satisfy requirements of the chosen business major, which will be a minimum of 30 credit hours.		30
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) ² Calculus with Analytic Geometry I	3-4
BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business ³ Real Estate Law Insurance Law	3
INFO 360 or ACCT 307	Business Information Systems ⁴ Accounting Systems	3
Open electives		
Select any course. ⁵		17
Total Hours		120

1
BUSN 205 satisfies general education AOI for global perspectives.

2
MATH 200 is particularly recommended for economics and finance majors.

3

The B.S. in Real Estate requires FIRE 325 and the B.S. in Finance with a concentration in risk management and insurance requires FIRE 359.

4

Accounting majors must take ACCT 307.

5

Students may choose electives to reach the minimum total of 120 credits.

Freshman year		Hours
Fall semester		
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
General education course		3
General education course		3
Term Hours:		15
Spring semester		
BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Open elective		3
Term Hours:		15
Sophomore year		
Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1

BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business or Real Estate Law or Insurance Law	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		16
Junior year		
Fall semester		
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
SCMA 320	Production/Operations Management	3
Major courses		6
Term Hours:		15
Spring semester		
INFO 360 or ACCT 307	Business Information Systems or Accounting Systems	3
FIRE 311	Financial Management	3
Major courses		6
Open elective		3
Term Hours:		15
Senior year		
Fall semester		
BUSN 499	Business Knowledge Exam	0
Major courses		9
Open electives		5
Term Hours:		14
Spring semester		
MGMT 434	Strategic Management	3
Major courses		9
Open elective		3
Term Hours:		15
Total Hours:		120

Business honors

Undergraduate business majors may earn business honors. Any student enrolled in the VCU Honors College and in the business foundation program or with a major within the School of Business is eligible to participate.

The mission of the Business Honors Program is to provide a challenging experience for high-ability School of Business students that boosts creativity, strategic thinking, teamwork and leadership in collaboration with the VCU Honors College.

The Business Honors Program produces exceptional business graduates who are prepared to excel in any environment of their choosing. It will achieve this by:

- Fostering a culture of intellectual curiosity and achievement
- Creating long-term, cohesive relationships within a community of highly motivated VCU students
- Partnering with local industry leaders to provide internships, seminars and professional mentoring

To earn business honors, students must complete business honors courses and fulfill all of the requirements to graduate with University Honors. Students who enter The Honors College with fewer than 54 credits must complete at least 15 credit hours of business honors courses. Students who enter The Honors College with 54 or more credit hours must complete at least 12 credit hours of business honors courses. Honors core requirements also vary depending on the number of credit hours earned at the time of admission to the VCU Honors College. Transfer students and freshmen are equally encouraged to apply. For complete details on honors program admission and graduation requirements, see [honors.vcu.edu](http://www.honors.vcu.edu) (<http://www.honors.vcu.edu/>).

Current honors course offerings (<https://www.pubapps.vcu.edu/honors/academics/courses/>), including business honors courses are listed on The Honors College website.

Business honors graduates will be recognized at commencement with special regalia, and the distinction "Business Honors" will be noted on the transcript.

Inquires should be directed to the Office of Undergraduate Studies in the School of Business in Room B-1100 of Snead Hall.

Post-baccalaureate undergraduate certificates

The School of Business at VCU offers post-baccalaureate undergraduate certificates in accounting and information systems. These certificate programs are designed for individuals who hold bachelor's degrees in other fields. By taking the courses required at the undergraduate level in one of the certificate concentrations, individuals are able to obtain an extensive knowledge of the subject.

Refer to individual program listings for certificate requirements.

Application information

To apply, visit the Office of Admissions website. (<http://www.ugrad.vcu.edu/apply/>)

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved a minimum 2.5 GPA in their undergraduate work.

Academic regulations for School of Business post-baccalaureate undergraduate certificates

The following academic standards apply to students in the undergraduate certificate programs:

1. Candidates for the certificate are required to complete a minimum of 24 hours beyond the bachelor's degree, with a minimum of 24 credit hours of study to be taken while in the undergraduate certificate program at VCU.

2. All students admitted to a certificate program are assigned advisers. Students are required to work with their advisers to plan their certificate programs. Both the adviser and the associate dean for undergraduate studies must approve each student's program or changes. Courses taken prior to approval are taken at the student's own risk. Each student is required to complete an approved program form and file it with the undergraduate studies office no later than the end of the first semester in which the student is admitted. Failure to do so may result in dismissal from the program.
3. All requirements for the certificate must be completed within five years from the date of admission or taking the first course in the program. This time limitation applies to both full- and part-time students. A maximum of two one-year extensions may be granted if satisfactory progress is demonstrated on the part of students requesting extensions. For extensions, write to the associate dean for undergraduate studies.
4. Students may not use the same course(s) for two certificates or the certificate and another program.
5. Grades and GPA requirements:
 - a. Certificate recipients must have received an overall grade-point average of 2.5 on credit hours attempted for the certificate at VCU. The grades of D or F are counted in computing the overall GPA but carry no credit.
 - b. Grades of A, B and C are passing grades; D is not a passing grade. Students who receive a grade of D or below on more than 20 percent of the credit hours attempted for the program will be terminated from their program.
 - c. Courses in which students have earned a grade of D or F must be repeated if these courses are needed for the program. The historical repeat course option in baccalaureate programs is not applicable to certificate programs.
 - d. Students who satisfy all the requirements except the 2.5 GPA may be allowed to take a maximum of six additional credit hours to raise the average. Students are required to get the approval of the adviser and the associate dean of undergraduate studies before attempting additional credit hours.
6. Transfer credits:
 - a. Transfer credit, including courses from VCU to be applied after acceptance in the program, is accepted at the discretion of the associate dean for undergraduate studies upon the recommendation of the student's adviser.
 - b. All transfer work, including courses from VCU, must be at the minimum a C grade.
 - c. CLEP examination credit is not accepted for the certificate programs.
 - d. Credits to be earned at other institutions after acceptance to the program must be approved in advance, and approval is granted at the discretion of the associate dean for undergraduate studies.
7. Students must continually demonstrate acceptable professional behavior to be retained in the program.
8. Students must apply to graduate using the undergraduate graduation application form. For deadlines, consult the university calendar.
9. The policies of the university regarding undergraduate degree programs will apply as the minimum when the certificate policy is not stated clearly in these policies. When in conflict, the stricter policy will apply in any case.

Student appeals for exceptions to policies or academic standards may be made in writing to:

Virginia Commonwealth University
 School of Business
 Associate Dean for Undergraduate Studies
 Box 844000
 Richmond, VA 23284-4000

Academic policies

Admission guidelines and deadlines

Students applying to the School of Business should have completed four years of high school mathematics and must follow the application submission dates for the university as stated in the Admission to the university (p. 32) section of this bulletin.

Students who apply to the B.S. in Financial Technology program may be admitted directly into that program as freshmen. For all other baccalaureate degrees, freshmen are admitted initially into the business foundation program and then declare a specific business major upon meeting certain requirements, normally by the start of the junior year of study.

The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 (with a minimum grade of C), and UNIV 200 (with a minimum grade of C). Students are also required to have a minimum cumulative GPA at VCU of 2.50.

Incoming freshmen

Business foundation students must meet the requirements to declare a specific business major by the end of the semester in which they attempt at least their 60th credit hour, including transfer credits. The tally of attempted hours includes credit hours from courses in which a W, an F or any other grade has been assigned. This is reported on the transcript as "overall attempted hours." Business foundation students should work closely with their academic adviser to ensure they are on target to meet their deadline to declare a specific business major.

Incoming transfer students

Transfer students are admitted into the business foundation program by Undergraduate Admissions. Transfer students who are eligible to declare a specific business major (based on transfer course work) will be accepted into their major during New Student Orientation. Those transfer students not immediately admitted to a specific business major will enter as business foundation students. They must meet the requirements to declare a specific business major within the minimum number of semesters needed to complete the required courses listed above.

Change of major

VCU students in other programs with fewer than 30 earned credit hours who wish to change into a business major follow the same admission deadlines as students admitted to the business foundation program as freshmen. VCU students with 30 or more earned hours at the time of the change-of-major follow the same admission guidelines and deadlines as transfer students.

Once a student meets the requirements to officially declare a major a change-of-major form will be submitted by the student's academic adviser. The change of major becomes effective at the beginning of the following semester.

Students who have not met the requirements to declare a specific business major by the deadlines described above will be separated from the business program and asked to seek a major outside of the School of Business. This in itself does not preclude the student from completing another major at VCU, including the economics major offered through the College of Humanities and Sciences.

Students may appeal the separation via their academic adviser to the assistant dean for student resources and enrollment management in the School of Business. The assistant dean may, at their discretion, extend the time period needed to meet the requirements, generally by only one semester. If this extension is not granted and the student wishes to appeal the assistant dean's decision, the appeal will be heard by the School Undergraduate Programs Committee, which may establish a subcommittee for this purpose. A student who wishes to appeal must submit their appeal prior to the start of the next semester in which the student registers for classes. The SUPC shall schedule appropriate meeting dates and deadlines for students to submit their appeals and students must adhere to those deadlines. Students who have missed their deadline to declare a major in business or who have been separated from the business program may appeal to re-enter the School of Business no sooner than 24 months after the end of the student's most recent semester in the program.

Pass/fail grading policy

School of Business students cannot use the pass/fail grading policy for the following courses: ACCT 203, ACCT 204, BUSN 212, ECON 211, FIRE 311, INFO 360, MATH 200, MGMT 303, MGMT 310, MGMT 434, MKTG 301, SCMA 301, SCMA 320 or any course that counts toward the calculation of the major GPA. Please check with your academic adviser before taking the pass/fail grading option.

Time limit on course credits

Course work that was earned more than 10 years prior to graduation, including course work at VCU and that transferred from other institutions, will be evaluated by the associate dean for undergraduate studies to determine whether it can be used to fulfill degree requirements for the B.S. degree or post-baccalaureate undergraduate certificate. In making this determination, the associate dean will consult with the chair of the academic department offering the program of study and consider the extent to which the course content and skills acquired when the courses were taken adequately reflect current learning goals for the program.

Enrollment in business courses by nonbusiness majors

Only business foundation students are allowed to take BUSN 225. All VCU students may enroll in the other 100- and 200-level courses in the

School of Business provided the prerequisites are met. The following 300- and 400- level courses are open to all students who have met the published prerequisites and restrictions:

Course	Title	Hours
FIRE 301	Personal Financial Planning	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk and Insurance	3
FIRE 444	Occupational Safety, Health and Security	3
FIRE 449	Employee Benefit Planning	3
MGMT 321	Survey of Entrepreneurship	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 302	Business Statistics II	3

All other 300- and 400-level courses are restricted to declared majors within the School of Business and students who are required to take specified business courses for their programs of study. Business foundation students may be eligible to enroll in 300- and 400-level courses if they meet certain requirements. Business foundation students must request overrides to register for the class with their adviser in the Office of Undergraduate Studies or University Academic Advising.

Nondegree-seeking degree-holder students and Bachelor of Interdisciplinary Studies students with approved programs of study that include upper-level business courses not listed above may request an override (https://docs.google.com/forms/d/e/1FAIpQLSee1ccCx3LFMr515ag5CXTYgAl3E6CmwBljAJYQ1hbgu_fUfw/viewform/) through the School of Business.

Limitation on total credits earned by nonbusiness majors

The number of credits that nonbusiness majors may accumulate from enrollment in classes offered by the School of Business is limited to a maximum of 25 percent of the total credits required for graduation in their programs. Students who wish to present more than 25 percent of their course work in business and/or economics must be admitted to a major in the School of Business, must complete a minimum of 27 credits from the School of Business advanced program after acceptance into the major and must meet all graduation requirements of the school. This does not limit the number of courses in economics for economics majors in the College of Humanities and Sciences.

Minors in the School of Business

Nonbusiness majors may earn no more than one minor offered by the School of Business. Note the minor in economics is offered by the College of Humanities and Sciences and thus may be combined with a business minor. The minor in general business is not open to students earning a B.S. in the School of Business.

Transfer policies

In addition to meeting the general requirements of the university and the School of Business, transfer students who plan to enroll in an undergraduate program in business must comply with the following requirements:

1. Incoming transfer students who are otherwise qualified for admission to the advanced program will be evaluated based on the cumulative GPA they had at their previous institution(s). Once transfer students

have completed courses at VCU, however, their admission to the advanced program is evaluated using their cumulative GPA at VCU.

2. Transfer of business and economics courses from two-year institutions is limited to courses offered by the School of Business as 100- and 200-level courses. An exception is made for professional development courses suitable to transfer as BUSN 301, or business statistics courses that transfer to VCU as SCMA 301 or SCMA 302. See the online VCU Transfer Guide for details.
3. Transfer credit for 300- and 400-level business courses will only be given for courses completed in a business program that is accredited by AACSB International. Exceptions may be reviewed and approved by the assistant dean for student resources.
4. Credits earned at other institutions carrying a grade of D (or equivalent) are not accepted for transfer.
5. Transfer credits may be applied to no more than 12 hours of credit in the major. A minimum of 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Study abroad credits

Because the experience expands students' perspectives, the School of Business encourages students to study abroad and (with prior approval) to transfer business credits back to VCU. However, note that international students will not be approved to transfer 300- and 400-level business credits from their home country as "study abroad" credit.

Student advising

Freshmen and continuing sophomore business students are assigned an adviser in University Academic Advising. All other business students are assigned an adviser in the Office of Undergraduate Studies to assist them in planning course work, becoming familiar with university services, interpreting university rules and procedures and clarifying career objectives. Major maps (<https://majormaps.vcu.edu/>) are available to show students the various ways to prepare for graduation and a successful career in the student's chosen field. Students are also strongly encouraged to consult with Career Services in the School of Business and faculty members in their major field of study to plan career paths.

While faculty and staff of the School of Business provide information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his or her program. Students should familiarize themselves with curriculum requirements, appropriate sequencing of courses and course prerequisites detailed in the Shared undergraduate business curriculum (p. 469) page of this Bulletin and university academic regulations covered in the academic regulations (p. 14) section of this bulletin.

Double majors

Students can declare a double major in the School of Business by contacting their academic adviser. The request for a double major should be approved before the student begins courses in the second major.

A double major fulfills the requirements of two majors concurrently. To earn a degree with a double major, the student must fulfill the general education requirements for one of the majors plus all of the other requirements of the degree programs of which the majors are a part. The School of Business does not limit the number of courses that may be

double-counted between an undergraduate business degree and a degree offered by another school or college at VCU.

It is possible to earn a double major or double concentration within the School of Business, with the following exceptions: (1) the management/business administration sub-concentration may not be combined with either the management/international management or the management/entrepreneurship sub-concentration and (2) only one marketing concentration may be earned. To earn more than one major or concentration a student must complete all of the degree requirements for both designations. However, no more than five courses may be double counted as major requirements. In cases with more than five duplicate courses, additional major electives must be selected to reach a minimum of 39 credits in each major and 144 total credits.

Dual degree

It is possible to obtain a dual degree (p. 23) in two business majors or concentrations at the same time, resulting in two diplomas, with the following exceptions: (1) the management/business administration sub-concentration may not be combined with either the management/international management or the management/entrepreneurship sub-concentration and (2) only one marketing concentration may be earned. Students pursuing dual degrees must meet all of the requirements that apply to double majors or concentrations and earn a minimum of 150 credits.

Laptop computer requirement

Entering freshmen and transfer students are required to purchase a laptop computer capable of meeting School of Business specifications. Information on the minimum required laptop specifications and the required software can be obtained from the "Current undergraduate students" section of the School of Business website

General business, minor in

The minor in general business is for nonbusiness majors and requires a minimum of 18 credits. Students must attain a minimum cumulative GPA of 2.0 in these courses.

It is suggested that students take the foundation courses first.

ACCT 202 and ECON 203 are the recommended courses. If a student wishes to become a business major, ACCT 202 cannot be applied to the business program. ECON 203 with a minimum grade of B can be applied to the business program. Also note that students may receive credit for only two of the following three courses: ECON 203, ECON 210 or ECON 211. ACCT 205 and ECON 205 are recommended for engineering students.

FIRE 311 has the following prerequisites: SCMA 212 or MATH 200; and ACCT 203 or ACCT 202 (for nonbusiness majors). This course is restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5.

INFO 160 and junior standing are prerequisites to INFO 360.

Junior standing is required for MGMT 319.

All students entering junior-level business and economics courses are expected to have competency in computer-based word processing and spreadsheet skills.

Students who would like to apply transfer credits toward the general business minor will be limited to no more than one-half the total required number of credits.

Course requirements for minor in general business

Course	Title	Hours
Foundation courses		
Select one of the following accounting courses:		3
ACCT 202	Accounting for Non-business Majors	
ACCT 203	Introduction to Accounting I	
ACCT 204	Introduction to Accounting II	
ACCT 205	Introductory Accounting Survey	
ACCT 507	Fundamentals of Accounting	
Select one of the following economics courses:		3
ECON 203	Introduction to Economics	
ECON 205	The Economics of Product Development and Markets	
ECON 210	Principles of Microeconomics	
ECON 211	Principles of Macroeconomics	
ECON 500		
Finance/insurance elective		
Select one of the following:		3
FIRE 301	Personal Financial Planning	
FIRE 305	Principles of Real Estate	
FIRE 309	Risk and Insurance	
FIRE 311	Financial Management	
General business electives		
Select three of the following:		9
BUSN 323	Legal Environment of Business	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
INFO 360	Business Information Systems	
MGMT 310	Managing People in Organizations	
MGMT 319	Leadership	
MGMT 321	Survey of Entrepreneurship	
MKTG 301	Marketing Principles	
Total Hours		18

Department of Accounting

Carolyn S. Norman, Ph.D.
Chair

business.vcu.edu/academics/accounting (<https://business.vcu.edu/academics/accounting/>)

The future development of the accounting profession depends upon the quality of the educational foundation on which it rests. The Department of Accounting is committed to the support of professional accounting through the delivery of educational experiences directed toward practice and through research that addresses the important policy issues of the day.

The mission of the department is to prepare students for careers in accounting, to interpret and expand accounting knowledge, and to render service to the profession and communities. The department does so by:

1. Providing a learning environment in which students are encouraged to interact with others in identifying and solving accounting and business problems
 2. Investigating, developing and sharing knowledge, which has the potential for significant influence on accounting, business and education
 3. Interacting with the accounting profession, the business community and the community at large
- Accounting, Bachelor of Science (B.S.) (p. 475)
 - Accounting, Certificate in (Post-baccalaureate undergraduate certificate) (p. 477)

Accounting, Bachelor of Science (B.S.)

The major in accounting is designed to prepare students for entry-level positions in accounting. This program will qualify graduates to sit for the Uniform Certified Public Accountant Examination in Virginia. However, certification requires 150 hours of college credits. Most public accounting firms give hiring preference to applicants who have completed the full 150 hours prior to starting work.

Student learning outcomes

Upon completing this program:

- Graduates will demonstrate a broad base of knowledge across accounting topics and apply that knowledge in a variety of contexts.
- Graduates will demonstrate an understanding of the core business and strategic concepts involved in accounting.
- Graduates will demonstrate the ability to identify and communicate accounting ethical issues; evaluate information in a manner free of distortion, personal bias or conflicts of interest; recognize situations where professional ethical standards apply; respect confidentiality.
- Graduates will demonstrate the ability to effectively communicate ideas and analysis of accounting problems. Graduates can demonstrate this ability either in writing or in oral presentations (e.g., writing memos, thought papers or other types of business correspondence; presenting case analyses; etc.).

The admission requirements for the School of Business (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

All upper-level accounting courses with a prerequisite course require a minimum grade of C in the prerequisite course and the following must be fulfilled:

- Students must have received a minimum grade of C in all required accounting courses.
- Required accounting courses in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.5 GPA in upper-level ACCT courses to graduate.

Degree requirements for Accounting, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ACCT 301	Federal Income Taxation for Individuals	3
ACCT 303	Intermediate Accounting I	3
ACCT 304	Intermediate Accounting II	3
ACCT 305	Intermediate Accounting III	3
ACCT 306	Cost Accounting	3
ACCT 307	Accounting Systems	3
ACCT 406	Auditing	3
ACCT 408	Data Analytics for Accountants	3
• Additional major requirements		
INFO 320	Business Intelligence and Data Mining	3
or SCMA 302	Business Statistics II	
or SCMA 303	Business Analytics	
• Major electives		
Approved data analytics electives (Select from list below.)		6
Ancillary requirements		
• Ancillary core requirements		

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 323	Legal Environment of Business	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201	Foundations of Business ¹	3
or BUSN 205	Introduction to the World of Business	
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
BUSN 400	Principles of Consulting	3
or BUSN 401	International Consulting Practicum	
or MGMT 319	Leadership	
Open electives		
Select any course. ²		14
Total Hours		120

¹

BUSN 205 satisfies general education AOI for global perspectives.

²

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved data analytics electives

Course	Title	Hours
INFO 320	Business Intelligence and Data Mining	
SCMA 303	Business Analytics	
SCMA 339	Quantitative Solutions for Supply Chain Management	
SCMA 430	Data Management and Visualization	
SCMA 440	Data Mining and Forecasting	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

		Hours
Fall semester		
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
General education course		3
General education course		3

Term Hours: 15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
General education course		3

Term Hours: 15

Sophomore year**Fall semester**

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business	3
or Introduction to the World of Business		
BUSN 205		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
SCMA 301	Business Statistics I	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

Term Hours: 15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 323	Legal Environment of Business	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
SCMA 302	Business Statistics II	3
Open elective		2

Term Hours: 15

Junior year**Fall semester**

ACCT 301	Federal Income Taxation for Individuals	3
ACCT 303	Intermediate Accounting I	3
MGMT 303	Creativity and Ideation	3
MKTG 301	Marketing Principles	3

SCMA 320	Production/Operations Management	3
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Term Hours: 15

Spring semester

ACCT 304	Intermediate Accounting II	3
ACCT 307	Accounting Systems	3
FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
Open elective		3

Term Hours: 15

Senior year**Fall semester**

ACCT 305	Intermediate Accounting III	3
ACCT 306	Cost Accounting	3
BUSN 400	Principles of Consulting	3
or International Consulting Practicum		
BUSN 401	or Leadership	
or MGMT 319		

BUSN 499	Business Knowledge Exam	0
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Data analytics elective (see list)	3
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Open elective	3
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Term Hours: 15

Spring semester

ACCT 406	Auditing	3
ACCT 408	Data Analytics for Accountants	3
MGMT 434	Strategic Management	3
Data analytics elective (see list)	3	
Open elective	3	

Term Hours: 15

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Accounting, Bachelor of Science (B.S.) with a concentration in data analytics

Note: Admission to this concentration is permanently suspended prior to closure.

Accounting, Certificate in (Post-baccalaureate undergraduate certificate)

The post-baccalaureate undergraduate Certificate in Accounting is designed for individuals who want an extensive knowledge of accounting and hold bachelor's degrees in other fields. Additionally, graduates are well-qualified to sit for the Uniform Certified Public Accountant Examination in Virginia. Candidates for the certificate are required to complete 16 courses (48 credit hours). A maximum of eight courses (24 credit hours) may be waived if equivalent courses have been completed as part of a bachelor's degree. A minimum of 24 credit hours of study must be taken at VCU after acceptance into the certificate program.

For additional information, visit the School of Business website. (<https://business.vcu.edu/academics/accounting/post-baccalaureate-certificate-in-accounting/>)

Learning outcomes

Upon completing this program:

- Graduates will demonstrate a broad base of knowledge across accounting topics and be able to apply that knowledge in a variety of contexts.
- Graduates will demonstrate an understanding of the core business and strategic concepts involved in accounting.
- Graduates will demonstrate the ability to identify and communicate accounting ethical issues; evaluate information in a manner free of distortion, personal bias or conflicts of interest; recognize situations where professional ethical standards apply; respect confidentiality.
- Graduates will demonstrate the ability to effectively communicate ideas and analysis of accounting problems. Graduates will demonstrate this ability either in writing or in oral presentations (e.g., writing memos, thought papers or other types of business correspondence; presenting case analyses; etc.).

Special requirements

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved a minimum GPA of 2.5 in their undergraduate work.

After acceptance in the program, certificate candidates are required to complete a minimum of 24 credit hours of their program at VCU.

Academic regulations for School of Business post-baccalaureate undergraduate certificates can be found in the school's Undergraduate information (p. 468) section of this bulletin.

All upper-level accounting courses with a prerequisite course require a minimum grade of C in the prerequisite course and the following must be fulfilled:

- Students must have received a minimum grade of C in all required accounting courses.
- Required accounting courses in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.5 GPA in upper-level ACCT courses to graduate.

Degree requirements for Certificate in Accounting

Certificate requirements

Course	Title	Hours
Required courses (24 credits minimum) ¹		
ACCT 301	Federal Income Taxation for Individuals	3
ACCT 303	Intermediate Accounting I	3
ACCT 304	Intermediate Accounting II	3
ACCT 305	Intermediate Accounting III	3
ACCT 306	Cost Accounting	3
ACCT 307	Accounting Systems	3
ACCT 406	Auditing	3
ACCT 408	Data Analytics for Accountants	3

Business electives	24
Total Hours	48

¹

Students who receive waivers to any required courses must complete additional business or accounting courses, as approved by their adviser, to total 24 credits.

Business electives

Course	Title	Hours
Select eight non-accounting business courses (must be 300- or 400-level) from the following: BUSN, ECON, FIRE, INFO, MGMT, MKTG, SCMA		

The minimum total of credit hours required for this certificate is 48.

Sample plan of study

Year one

Fall semester		Hours
ACCT 301	Federal Income Taxation for Individuals	3
ACCT 303	Intermediate Accounting I	3
Business electives		6
Term Hours:		12

Spring semester

ACCT 304	Intermediate Accounting II	3
ACCT 306	Cost Accounting	3
Business electives		6
Term Hours:		12

Year two

Fall semester		Hours
ACCT 305	Intermediate Accounting III	3
ACCT 307	Accounting Systems	3
Business electives		6
Term Hours:		12

Spring semester

ACCT 406	Auditing	3
ACCT 408	Data Analytics for Accountants	3
Business electives		6
Term Hours:		12

Total Hours: 48

The minimum total of credit hours required for this certificate is 48.

Department of Economics

Leslie S. Stratton, Ph.D.
Professor and chair

business.vcu.edu/academics/economics (<https://business.vcu.edu/academics/economics/>)

The Department of Economics provides instruction for degree programs at the baccalaureate, master's and doctoral level. The faculty works to develop in students the ability to use economic reasoning to understand and analyze business and economic phenomena and policies — the skills needed for careers in a rapidly changing world. To enhance the educational process and to broaden the frontiers of knowledge, faculty

members conduct basic and applied research and provide academic and professional service to the university and professional communities.

- Economics, Bachelor of Science (B.S.) [School of Business] (p. 479)

Economics, Bachelor of Science (B.S.) [School of Business]

Economics is the science of human choice, the study of how scarce resources are allocated among competing uses to satisfy human wants. Since many choices analyzed are made by or affect business decision makers, economics is a unique blend of liberal arts and business. Therefore, the Department of Economics offers an undergraduate major in both the College of Humanities and Sciences and the School of Business. The major in the College of Humanities and Sciences is designed for students who desire the flexibility and breadth that is associated with a liberal arts degree. Students who want to combine training in economics with exposure to the business disciplines should consider the major in the School of Business.

Undergraduate work in economics is excellent preparation for careers in business, government and teaching, as well as for graduate work in economics and professional schools such as law, public administration and medicine. Specialization in economics prepares students for careers that emphasize analytical thinking, a broad understanding of the economy and business organizations and the proper choice of policies by governments and business enterprises. Because of their analytical, quantitative and decision-making skills, students who major in economics are sought after for a wide array of positions in management and sales. The specific skills they acquire also provide employment opportunities in large organizations with departments that forecast business conditions and analyze economic data of special interest to the organizations.

The mission of the B.S. in Economics is to provide undergraduate students with economic knowledge and skills that will enable them to compete successfully in changing regional, national and global economic environments.

Learning goals

- Critical thinking
- Quantitative proficiency
- Communication

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will solve key microeconomic problems.
- Students will solve key macroeconomic problems.
- Students will be able to interpret and analyze data and express economic relationships using graphs, equations and words.
- Students will demonstrate strong oral and written communication skills.
- Students will be able to employ economic models and data to analyze questions of economic significance.

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be

admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201, or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Degree requirements for Economics, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
• Additional major requirements		
ECON 431	Labor Economics	3
or ECON 441	Experimental Economics	
or ECON 442	Economic Growth	
or ECON 461	Monetary Policy Seminar	
or ECON 489	Senior Seminar in Economics	
ECON 501	Introduction to Econometrics	3
or SCMA 302	Business Statistics II	
• Major electives		
ECON electives (300 or 400 level or 501) ¹		15
Ancillary requirements		
• Ancillary core requirements		

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 323	Legal Environment of Business	3
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ² Introduction to the World of Business	3
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) ³	3-4
or MATH 200	Calculus with Analytic Geometry I	
INFO 360 or ACCT 307	Business Information Systems Accounting Systems	3
Open electives		
Select any course. ⁴		17
Total Hours		120

1

ECON 501 may be used as an elective if SCMA 302 (<http://bulletin.vcu.edu/search/?P=SCMA%20302>) is taken as a required course. BUSN 400 (<http://bulletin.vcu.edu/search/?P=BUSN%20400>) and BUSN 401 (<http://bulletin.vcu.edu/search/?P=BUSN%20401>) may be used as electives for students enrolled in the International Consulting Program.

2

BUSN 205 satisfies general education AOI for global perspectives.

3

MATH 200 is particularly recommended for economics majors.

4

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
MATH 151	Precalculus Mathematics (prerequisite for MATH 200; counts as open elective)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
General education course		3
General education course		3
Term Hours:		16
Spring semester		
BUSN 225	Winning Presentations	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
Open elective		3
Term Hours:		16
Sophomore year		
Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
BUSN 323	Legal Environment of Business	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		16
Junior year		
Fall semester		
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
MGMT 310	Managing People in Organizations	3
SCMA 320	Production/Operations Management	3
Term Hours:		12

Spring semester

ECON 302	Macroeconomic Theory	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
ECON elective		3

Term Hours: 15

Senior year**Fall semester**

BUSN 499	Business Knowledge Exam	0
ECON 501	Introduction to Econometrics or or Business Statistics II SCMA 302	3
ECON electives		9
Open elective		3

Term Hours: 15

Spring semester

ECON 431	Labor Economics or or Experimental Economics ECON 441 or or Economic Growth ECON 442 or or Monetary Policy Seminar or or Senior Seminar in Economics ECON 461 or ECON 489	3
MGMT 434	Strategic Management	3
ECON elective		3
Open electives		6

Term Hours: 15

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.A.

The accelerated B.S. and M.A. program allows qualified students to earn both the B.S. and M.A. in economics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of 600-level graduate courses toward both the B.S. and M.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will be more competitive when seeking positions requiring the acquisition, manipulation and analysis of data. While undergraduates are required to obtain some data skills, the M.A. program is far more focused in this area with a course in mathematical economics and three econometrics classes. Furthermore, two of these econometrics classes require students to gather data, perform analysis and report on that analysis. Such practical skills are highly valued in the labor market.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including ECON 300, ECON 301 and ECON 302; an overall GPA of 3.25; and a GPA of 3.25 in

economics and quantitative course work. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration. Successful applicants would enter the accelerated program in the summer following their junior year and start the M.A. program in the term after which they receive their bachelor's degree.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program immediately following completion of their junior year, but no later than May 15 of that year. Three reference letters (at least one from an economics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the economics M.A. program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate economics adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Economics degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin. For students in the accelerated program, ECON 501 and ECON 614 must be taken as the quantitative approaches to business requirements.

A maximum of 12 graduate credits at the 600 level may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for required major electives or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate economics courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
ECON 604	Advanced Microeconomic Theory	3
ECON 612	Econometrics	3
ECON 614	Mathematical Economics	3
Elective ¹		3
Total Hours		12

1

Students will choose an elective in consultation with the faculty adviser to the M.A. program to serve as an elective for both programs.

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BUSN 325	Organizational Communication	3
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
MGMT 310	Managing People in Organizations	3
Approved major elective		3
Term Hours:		15
Spring semester		
ECON 302	Macroeconomic Theory	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
Approved major elective		3
Term Hours:		15
Senior year		
Fall semester		
BUSN 499	Business Knowledge Exam	0
ECON 431	Labor Economics	3
or ECON 441	Experimental Economics	
or ECON 461	Monetary Policy Seminar	
or ECON 489	Senior Seminar in Economics	
ECON 501	Introduction to Econometrics	3
ECON 614	Mathematical Economics	3
Open electives		6
Term Hours:		15
Spring semester		
ECON 604	Advanced Microeconomic Theory	3
ECON 612	Econometrics	3
MGMT 434	Strategic Management	3
M.A. elective		3
Open elective		3
Term Hours:		15
Fifth year		
Fall semester		
ECON 607	Advanced Macroeconomic Theory	3
ECON 642	Panel and Nonlinear Methods in Econometrics	3
M.A. elective		3
Term Hours:		9
Spring semester		
ECON 641	Econometric Time-series Analysis	3
M.A. electives		6
Term Hours:		9

Department of Finance, Insurance and Real Estate

Manu Gupta, Ph.D.

Associate professor and chair

business.vcu.edu/academics/finance-insurance-and-real-estate (<https://business.vcu.edu/academics/finance-insurance-and-real-estate/>)

The Department of Finance, Insurance and Real Estate delivers knowledge to students in all programs offered by the School of Business and contributes to the expansion of knowledge by engaging in scholarly activity. The department provides core courses as well as majors, minors and concentrations. In addition, the department develops and delivers courses in continuing professional education for practitioners seeking to upgrade their skills and/or attempting to achieve professional certification.

- Finance, Bachelor of Science (B.S.) (p. 482)
- Finance, Bachelor of Science (B.S.) with a concentration in risk management and insurance (p. 486)
- Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science (p. 489)
- Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering (p. 491)
- Real Estate, Bachelor of Science (B.S.) (p. 493)
- Actuarial science, minor in (p. 496)
- Real estate, minor in (p. 496)
- Risk management and insurance, minor in (p. 497)

Business, Bachelor of Science (B.S.) with a concentration in finance

Note: This concentration has been permanently suspended prior to closure.

Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance

Note: This concentration has been permanently suspended prior to closure.

Finance, Bachelor of Science (B.S.)

The Bachelor of Sciences in Finance prepares students with the knowledge and skills to analyze information and data to support effective financial decision-making; apply the fundamentals of finance, planning and budgeting to support businesses; and communicate financial analysis and conclusions in a manner which informs and improves quality of organizational and individual decision-making. Graduates of the program will be prepared for productive careers in a wide range of financial occupations including corporate financial management, financial planning and analysis, financial sales, business lending, credit analysis and management, treasury operations, commercial and investment banking, risk management, insurance sales, underwriting and

claims management, securities analysis, investment management, and financial advisory functions.

Learning goals

The program is designed to help students develop skills in financial management and investments. Graduates will be able to analyze and communicate findings on complex financial issues.

Student learning outcomes

Upon completing this program:

- Students will be able to identify and use relevant data to calculate appropriate quantitative measures that help in making informed financial decisions.
- Students will be able to describe and expound on several financial solutions in a structured, organized and deliberate manner with comparisons, anecdotal evidence and descriptive analysis.
- Students will be able to express the analytic, quantitative and ethical dimensions of a business problem and proposed solutions in a clear, well-organized manner that is free of bias or distortions.
- Students will be able to identify and analyze ethical dimensions of a business situation and relate those dimensions to general and professional ethical standards.

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 1

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Students must receive a minimum grade of C in FIRE 317, FIRE 321 and FIRE 461, and they must have a minimum GPA of 2.0 in the remainder of the finance major requirements. The minimum grade of C in FIRE 317, FIRE 321 and FIRE 461 must be obtained after two attempts (a withdrawal counts as an attempt) or the student is asked to change majors.

Degree requirements for Finance, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
• Additional major requirements		
FIRE 461	Cases in Financial Management	3
• Major electives		
Restricted FIRE electives (choose two)		6
FIRE 417	Security Analysis and Portfolio Management	
FIRE 441	Funds Management in Financial Institutions	
FIRE 451	Options, Futures and Swaps	
Approved finance electives (Choose four from approved list.) ¹		12
Ancillary requirements		
• Ancillary core courses		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 323 or FIRE 459	Legal Environment of Business Insurance Law	3
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ² Introduction to the World of Business	3

BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	

Open electives
 Select any course.³ 16-17

Total Hours 120

1

FIRE 417, FIRE 441 and FIRE 451 may count as a finance elective if not used as one of the restricted electives.

2

BUSN 205 satisfies general education AOI for global perspectives.

3

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved finance electives

Course	Title	Hours
ACCT 303	Intermediate Accounting I	3
ACCT 306	Cost Accounting	3
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	6
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
ECON 303	Managerial Economics	3
ECON 305	Public Finance	3
ECON 307	Money and Banking	3
ECON 315	Economic Development	3
ECON 325	Environmental Economics	3
ECON 333	Behavioral Economics	3
ECON 338	Game Theory	3
ECON 402	Business Cycles and Forecasting	3
ECON 403	Introduction to Mathematical Economics	3
ECON 419	History of Economic Thought	3
ECON 421	Government and Business	3
ECON 442	Economic Growth	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk Management and Insurance	3
FIRE 315	Real Property Management	3
FIRE 316	International Financial Management	3
FIRE 319	Financial Mathematics	3
FIRE 320	Actuarial Probability Concepts	3
FIRE 359	Issues in Risk Management and Insurance	3

FIRE 417	Security Analysis and Portfolio Management	3
FIRE 419	Advanced Risk and Insurance	3
FIRE 425	Real Estate Appraisal	3
FIRE 435	Real Estate Finance and Capital Markets	3
FIRE 439	Life Cycle Risk Management	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 445	Real Estate Investment Analysis	3
FIRE 449	Employee Benefit Planning	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
FIRE 491	Topics in Finance, Insurance and Real Estate	1-3
FIRE 492	Independent Study in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate	3
FIRE 540	Financial Analytics	3
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3

Freshman year

Fall semester	Hours
MATH 151 Precalculus Mathematics (counts toward open electives)	4
UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education course	3
General education course	3
Open elective	3

Term Hours: 16

Spring semester

BUSN 225	Winning Presentations	3
MATH 200 or BUSN 212	Calculus with Analytic Geometry I (satisfies general education quantitative foundations) or Differential Calculus and Optimization for Business	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
General education course		3

Term Hours: 16

Sophomore year

Fall semester	Hours	
ACCT 203	Introduction to Accounting I	3

BUSN 201 or BUSN 205	Foundations of Business ¹ or Introduction to the World of Business ¹	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		3
Term Hours:		16
Junior year		
Fall semester		
FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
SCMA 320	Production/Operations Management	3
Open electives		6
Term Hours:		15
Spring semester		
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
MGMT 303	Creativity and Ideation	3
Approved finance electives		6
Term Hours:		15
Senior year		
Fall semester		
FIRE 321	Intermediate Financial Management	3
INFO 360	Business Information Systems	3
BUSN 323 or FIRE 459	Legal Environment of Business or Insurance Law	3
Approved finance electives		3
Restricted FIRE elective		3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
FIRE 461	Cases in Financial Management	3
MGMT 434	Strategic Management	3
Approved finance elective		3
Restricted FIRE elective		3
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Finance and M.S. in Business with a concentration in finance in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees would have a more in-depth understanding of the complex world of finance. The analytical and communication skills gained through these accelerated degrees will make graduates more marketable for the jobs in the corporate finance and investment management industry.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including FIRE 311, FIRE 312 and FIRE 317; an overall GPA of 3.25; and a GPA of 3.25 in finance and quantitative course work. Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for spring semester admission and no later than July 1 for fall semester admission.

Three reference letters (at least one from a finance faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the master's program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate finance adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Finance degree will be awarded upon completion of a minimum of 120 of credits in the undergraduate program and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for required finance restricted elective, approved finance elective or an open elective for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate finance courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
FIRE 610	Financial Modeling and Analysis	3
FIRE 622	Financial Management of Financial Institutions	3

FIRE 623	Financial Management	3
FIRE 635	Investments and Security Analysis	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
Open electives		6
Term Hours:		15
Spring semester		
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
MGMT 303	Creativity and Ideation	3
Finance electives		6
Term Hours:		15
Senior year		
Fall semester		
BUSN 323 or FIRE 429	Legal Environment of Business Property and Liability Insurance	3
FIRE 321	Intermediate Financial Management	3
FIRE 610	Financial Modeling and Analysis	3
FIRE 635	Investments and Security Analysis	3
INFO 360	Business Information Systems	3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
FIRE 461	Cases in Financial Management	3
FIRE 622	Financial Management of Financial Institutions	3
FIRE 623	Financial Management	3
MGMT 434	Strategic Management	3
Term Hours:		15
Fifth year		
Fall semester		
FIRE 621	Cases in Financial Management	3
Graduate program electives		6
Term Hours:		9
Spring semester		
Graduate program electives		9
Term Hours:		9

Finance, Bachelor of Science (B.S.) with a concentration in risk management and insurance

The Bachelor of Sciences in Finance with a concentration in risk management and insurance prepares students for careers in the insurance industry on all levels including underwriting, claims adjusting, employee benefits, risk modeling and analysis, risk management in all sectors of the economy, financial planning, and graduate-level study of risk management.

Learning goals

The goal of the risk management and insurance concentration is to provide students with skills in financial management, risk management and financial planning. Graduates will be able to analyze and communicate findings on complex financial issues.

Student learning outcomes

Upon completing this program:

- Students will be able to identify risks, measure them and find mitigating solutions using all financial hedging instruments and insurance. The students will use relevant data to measure risks and solutions including design risk/awards and forecasting, loss reserves, frequency and severity. The students will be using appropriate quantitative measures for making informed risk management decisions as well as financial plans.
- Students will learn how to interpret data and apply the analysis and design they create to various situations.
- Students will be able to produce written reports and to express verbally the analytic, quantitative and ethical dimensions of risks and risk management of various entities to a variety of audiences.
- Students will be able to identify and analyze ethical dimensions of every element in risk management situations and relate those dimensions to professional ethical standards. Specifically, students will understand and articulate their fiduciary responsibility in a variety of topics and scenarios.

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112, UNIV 113, UNIV 114, UNIV 115, UNIV 116, UNIV 117, UNIV 118, UNIV 119, UNIV 120, UNIV 121, UNIV 122, UNIV 123, UNIV 124, UNIV 125, UNIV 126, UNIV 127, UNIV 128, UNIV 129, UNIV 130, UNIV 131, UNIV 132, UNIV 133, UNIV 134, UNIV 135, UNIV 136, UNIV 137, UNIV 138, UNIV 139, UNIV 140, UNIV 141, UNIV 142, UNIV 143, UNIV 144, UNIV 145, UNIV 146, UNIV 147, UNIV 148, UNIV 149, UNIV 150, UNIV 151, UNIV 152, UNIV 153, UNIV 154, UNIV 155, UNIV 156, UNIV 157, UNIV 158, UNIV 159, UNIV 160, UNIV 161, UNIV 162, UNIV 163, UNIV 164, UNIV 165, UNIV 166, UNIV 167, UNIV 168, UNIV 169, UNIV 170, UNIV 171, UNIV 172, UNIV 173, UNIV 174, UNIV 175, UNIV 176, UNIV 177, UNIV 178, UNIV 179, UNIV 180, UNIV 181, UNIV 182, UNIV 183, UNIV 184, UNIV 185, UNIV 186, UNIV 187, UNIV 188, UNIV 189, UNIV 190, UNIV 191, UNIV 192, UNIV 193, UNIV 194, UNIV 195, UNIV 196, UNIV 197, UNIV 198, UNIV 199, UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Students must receive a minimum grade of C in FIRE 309, FIRE 317 and FIRE 479 and must have a minimum GPA of 2.0 in the remainder of the risk management and insurance concentration requirements. Students must attain a minimum grade of C in FIRE 309, FIRE 317 and FIRE 479 after two attempts or they will be asked to change concentrations.

Degree requirements for Finance, Bachelor of Science (B.S.) with a concentration in risk management and insurance

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
• Concentration requirements		
FIRE 309	Risk Management and Insurance	3
FIRE 429	Property and Liability Insurance	3
FIRE 439	Life Cycle Risk Management	3
FIRE 459	Insurance Law	3
FIRE 479	Managing Financial Risk	3
Concentration electives		
Approved RMI electives (Choose three from approved list.)		9
Ancillary requirements		
• Ancillary core courses		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 301	Career and Professional Development	1
BUSN 225	Winning Presentations	3
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3

FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201	Foundations of Business ¹	3
or BUSN 205	Introduction to the World of Business	
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
Open electives		
Select any course. ²		16-17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved risk management and insurance electives

Course	Title	Hours
ACCT 301	Federal Income Taxation for Individuals	3
ACCT 303	Intermediate Accounting I	3
ACCT 410	Advanced Tax Accounting	3
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	6
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
ECON 303	Managerial Economics	3
ECON 305	Public Finance	3
ECON 307	Money and Banking	3
ECON 315	Economic Development	3
ECON 321	Urban Economics	3
ECON 325	Environmental Economics	3
ECON 333	Behavioral Economics	3
ECON 338	Game Theory	3
ECON 402	Business Cycles and Forecasting	3
ECON 403	Introduction to Mathematical Economics	3
ECON 419	History of Economic Thought	3
ECON 421	Government and Business	3
ECON 431	Labor Economics	3

ECON 442	Economic Growth	3
FIRE 305	Principles of Real Estate	3
FIRE 315	Real Property Management	3
FIRE 316	International Financial Management	3
FIRE 319	Financial Mathematics	3
FIRE 320	Actuarial Probability Concepts	3
FIRE 359	Issues in Risk Management and Insurance	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 424	Property and Liability Insurance	3
FIRE 429	Property and Liability Insurance	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 445	Real Estate Investment Analysis	3
FIRE 449	Employee Benefit Planning	3
FIRE 451	Options, Futures and Swaps	3
FIRE 461	Cases in Financial Management	3
FIRE 469	Advanced Property/Casualty Insurance: Alternative Markets	3
FIRE 491	Topics in Finance, Insurance and Real Estate	1-3
FIRE 492	Independent Study in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate (requires departmental approval)	3
MGMT 319	Leadership	3
MGMT 331	Human Resource Management	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
MKTG 442	Services Marketing	3
SCMA 302	Business Statistics II	3
Freshman year		
Fall semester		
MATH 151	Precalculus Mathematics (counts toward open electives)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
General education course		3
General education course		3
Term Hours:		16
Spring semester		
BUSN 225	Winning Presentations	3
MATH 200	Calculus with Analytic Geometry I	4
or	(satisfies general education quantitative foundations)	
BUSN 212	or Differential Calculus and Optimization for Business	

UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
General education course		3
Term Hours:		16
Sophomore year		
Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business ¹	3
or	or Introduction to the World of Business ¹	
BUSN 205		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Open elective		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		3
Term Hours:		16
Junior year		
Fall semester		
FIRE 311	Financial Management	3
FIRE 459	Insurance Law	3
MGMT 310	Managing People in Organizations	3
SCMA 320	Production/Operations Management (Open elective)	3
Open elective		3
Term Hours:		15
Spring semester		
FIRE 309	Risk Management and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
MGMT 303	Creativity and Ideation	3
Approved RMI elective		3
Term Hours:		15
Senior year		
Fall semester		
FIRE 479	Managing Financial Risk	3
INFO 360	Business Information Systems	3
FIRE 429	Property and Liability Insurance	3
Approved RMI elective		3
Term Hours:		12
Spring semester		

BUSN 499	Business Knowledge Exam	0
FIRE 321	Intermediate Financial Management	3
FIRE 439	Life Cycle Risk Management	3
MGMT 434	Strategic Management	3
Approved RMI elective		3
Open elective		3
Term Hours:		15
Total Hours:		120

1

BUSN 205 satisfies general education AOI for global perspectives.

The minimum number of credit hours required for this degree is 120.

Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science

The Bachelor of Science in Financial Technology offers concentrations in actuarial science and financial engineering. The program provides quantitatively oriented students the opportunity to apply mathematical, statistical and programming tools to the financial, risk management and actuarial disciplines. Designed to meet the growing need for quantitative modeling and analysis in finance, risk management and actuarial science, the program is technical and interdisciplinary in nature. The curriculum emphasizes courses in finance, statistics and mathematics with supporting courses in related areas.

The actuarial science concentration provides excellent preparation for the basic professional examinations and continued study in actuarial science. Students who complete this concentration also may find employment in areas such as quantitative applications in corporate and public financial policy, actuarial modeling and forecasting, reserves computation and rate making, and computer and information systems in the financial services and risk management industries.

Learning goals

- To support career advancement over time by giving students the academic foundation in finance and actuarial sciences needed for continued professional development
- To help students develop the professional skills that will be needed by the businesses and organizations that hire graduates
- To help students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

- Students will be able to identify and use relevant data to calculate appropriate quantitative measures that help in making informed actuarial calculations.
- Students will be able to describe and expound on competing propositions in a structured, organized and deliberate manner with comparisons, anecdotal evidence and descriptive analysis.

- Students will be able to express the analytic, quantitative and ethical dimensions of a business problem and proposed solutions in a clear, well-organized manner that is free of bias or distortions.

Special requirements

Students in the actuarial science concentration must attain a minimum grade of C in MATH 200, MATH 307, STAT 309, STAT 310, FIRE 319. A student receiving a grade below C may repeat the course one time to raise the grade to the required level. In addition, a minimum GPA of 2.5 must be maintained. Students who fall below a GPA of 2.5 will be placed on program probation and will be given one semester to return to the minimum GPA of 2.5. Students who do not return to the required minimum cumulative GPA of 2.5 after two semesters will be dismissed from the financial technology major. Students who do not satisfactorily attain the minimum grade of C in one course after two attempts will be dismissed from the financial technology major. In concert with the academic adviser of the department, an appeal may be submitted to the chair of the department. A student must have a minimum GPA of 2.5 to graduate from the program. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students admitted into this program must place into MATH 200 to continue in the program. No more than three credits in physical education courses may be applied to the degree. Many courses are offered irregularly; please work with an adviser for optimal course sequencing.

Credit for **SPCH 121** or **SPCH 321** will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees. The pass/fail grading policy may not be used for courses that can satisfy major degree requirements.

Degree requirements for Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 210	Computers and Programming	3
FIRE 309	Risk Management and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3

FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
INFO 320	Business Intelligence and Data Mining	3
MATH 201	Calculus with Analytic Geometry II	4
MATH 211	Mathematical Structures	3
MATH 307	Multivariate Calculus	4
STAT 309	Introduction to Probability Theory	3
• Concentration requirements		
FIRE 319	Financial Mathematics	3
FIRE 320	Actuarial Probability Concepts	3
STAT 310	Introduction to Statistical Inference	3
STAT 212	Concepts of Statistics	3
Concentration electives (choose four)		12
ACCT 303	Intermediate Accounting I	
ACCT 304	Intermediate Accounting II	
BNFO 201	Computing Skills and Concepts for Bioinformatics	
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	
BUSN 301	Career and Professional Development	
BUSN 323	Legal Environment of Business	
CMSC 330	Data Science Skills	
ECON 307	Money and Banking	
ECON 403	Introduction to Mathematical Economics	
FIRE 305	Principles of Real Estate	
FIRE 316	International Financial Management	
FIRE 429	Property and Liability Insurance	
FIRE 439	Life Cycle Risk Management	
FIRE 449	Employee Benefit Planning	
FIRE 459	Insurance Law	
FIRE 461	Cases in Financial Management	
FIRE 491	Topics in Finance, Insurance and Real Estate	
FIRE 492	Independent Study in Finance, Insurance and Real Estate	
FIRE 493	Internship in Finance, Insurance and Real Estate	
FIRE 496	Practicum in Portfolio Management	
FIRE 540	Financial Analytics	
INFO 300	Information Technology Infrastructure	
INFO 350	Programming	
MATH 310	Linear Algebra	
MGMT 310	Managing People in Organizations	
MGMT 434	Strategic Management	
MKTG 301	Marketing Principles	
MKTG 350	Customer and Marketing Analytics	
SCMA 320	Production/Operations Management	
SCMA 339	Quantitative Solutions for Supply Chain Management	
STAT 321	Introduction to Statistical Computing	
STAT 403	Introduction to Stochastic Processes	

Ancillary requirements		
• Ancillary core courses		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
• Additional ancillary requirements		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
Open electives		
Select any course. ¹		13
Total Hours		123

¹

Students may choose electives to reach the minimum total of 123 credits.

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
General education course		3
Term Hours:		16

Spring semester

ECON 211	Principles of Macroeconomics	3
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
Term Hours:		16

Sophomore year**Fall semester**

ACCT 203	Introduction to Accounting I	3
FIRE 309	Risk Management and Insurance	3
FIRE 319	Financial Mathematics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3

Term Hours: 15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 225	Winning Presentations	3
FIRE 320	Actuarial Probability Concepts	3
MATH 211	Mathematical Structures	3
General education course		3

Term Hours: 15

Junior year**Fall semester**

FIRE 311	Financial Management	3
INFO 320	Business Intelligence and Data Mining	3
STAT 309	Introduction to Probability Theory	3
MATH 307	Multivariate Calculus	4
Concentration elective		3

Term Hours: 16

Spring semester

CMSC 210	Computers and Programming	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
STAT 310	Introduction to Statistical Inference	3
Open elective		3

Term Hours: 15

Senior year**Fall semester**

FIRE 321	Intermediate Financial Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
Concentration elective		3
Open elective		3

Term Hours: 15

Spring semester

FIRE 417	Security Analysis and Portfolio Management	3
Concentration electives		6
Open electives		6

Term Hours: 15

Total Hours: 123

The minimum number of credit hours required for this degree is 123.

Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering

The Bachelor of Science in Financial Technology offers tracks in actuarial science and financial engineering. The program provides quantitatively oriented students the opportunity to apply mathematical, statistical and programming tools to the financial, risk management and actuarial disciplines. Designed to meet the growing need for quantitative modeling and analysis in finance, risk management and actuarial science, the program is technical and interdisciplinary in nature. The curriculum emphasizes courses in finance, statistics and mathematics with supporting courses in related areas.

The financial engineering track offers opportunities in areas such as derivative instruments, securities, hedging, financial risk assessment/management, quantitative trading and arbitrage, and asset/liability management. Students who complete the financial engineering track may choose to continue their education by enrolling in master's programs in financial engineering and mathematical finance, or by entering directly into doctoral-level study in finance and related areas.

Learning goals

- To support career advancement over time by giving students the academic foundation in information systems and data analytics related to the financial industry
- To help students develop the professional skills that will be needed by the businesses and organizations that hire graduates
- To help students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace

Student learning outcomes

Upon completing this program, students will know and know how to do the following.

- Students will be able to identify and use relevant data to calculate appropriate quantitative measures that help in making informed financial decisions.
- Students will be able to describe and expound on competing propositions in a structured, organized and deliberate manner with comparisons, anecdotal evidence and descriptive analysis.
- Students will be able to express the analytic, quantitative and ethical dimensions of a business problem and proposed solutions in a clear, well-organized manner that is free of bias or distortions.

Special requirements

Students in the financial engineering concentration must attain a minimum grade of C in MATH 200, MATH 307, STAT 309, STAT 310, FIRE 319. A student receiving a grade below C may repeat the course one time to raise the grade to the required level. In addition, a minimum GPA of 2.5 must be maintained. Students who fall below a GPA of 2.5 will be placed on program probation and will be given one semester to return to the minimum GPA of 2.5. Students who do not return to the required minimum cumulative GPA of 2.5 after two semesters will be dismissed from the financial technology major. Students who do not satisfactorily attain the minimum grade of C in one course after two attempts will

be dismissed from the financial technology major. In concert with the academic adviser of the department, an appeal may be submitted to the chair of the department. A student must have a minimum GPA of 2.5 to graduate from the program. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students admitted into this program must place into MATH 200 to continue in the program. No more than three credits in physical education courses may be applied to the degree. Many courses are offered irregularly, please work with an adviser for optimal course sequencing.

Credit for **SPCH 121** or SPCH 321 will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees. The pass/fail grading policy may not be used for courses that can satisfy major degree requirements.

Degree requirements for Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CMSC 210	Computers and Programming	3
FIRE 309	Risk Management and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
INFO 320	Business Intelligence and Data Mining	3
MATH 201	Calculus with Analytic Geometry II	4
MATH 211	Mathematical Structures	3
MATH 307	Multivariate Calculus	4
STAT 309	Introduction to Probability Theory	3
• Concentration requirements		
CMSC 330	Data Science Skills	3
ECON 501	Introduction to Econometrics	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 540	Financial Analytics	3
INFO 360	Business Information Systems	3

STAT 321	Introduction to Statistical Computing	3
Concentration electives (choose two)		6
ACCT 303	Intermediate Accounting I	
ACCT 304	Intermediate Accounting II	
ACCT 306	Cost Accounting	
ACCT 307	Accounting Systems	
BUSN 301	Career and Professional Development	
BUSN 323	Legal Environment of Business	
ECON 307	Money and Banking	
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	
ECON 403	Introduction to Mathematical Economics	
FIRE 305	Principles of Real Estate	
FIRE 316	International Financial Management	
FIRE 319	Financial Mathematics	
FIRE 320	Actuarial Probability Concepts	
FIRE 461	Cases in Financial Management	
FIRE 491	Topics in Finance, Insurance and Real Estate	
FIRE 493	Internship in Finance, Insurance and Real Estate	
INFO 300	Information Technology Infrastructure	
INFO 350	Programming	
MATH 310	Linear Algebra	
MGMT 310	Managing People in Organizations	
MGMT 434	Strategic Management	
MKTG 301	Marketing Principles	
SCMA 302	Business Statistics II	
SCMA 320	Production/Operations Management	
SCMA 339	Quantitative Solutions for Supply Chain Management	
STAT 403	Introduction to Stochastic Processes	
Ancillary requirements		
• Ancillary core courses		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
• Additional ancillary requirements		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
STAT 212 or SCMA 301	Concepts of Statistics Business Statistics I	3
Open electives		

Select any course. ¹	10
Total Hours	123

1

Students may choose electives to reach the minimum total of 123 credits.

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course	3
	General education course	3
Term Hours:		16

Spring semester

ECON 211	Principles of Macroeconomics	3
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course	3
Term Hours:		16

Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
BUSN 225	Winning Presentations	3
MATH 211	Mathematical Structures	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		15

Spring semester

ACCT 204	Introduction to Accounting II	3
CMSC 210	Computers and Programming	3
FIRE 309	Risk Management and Insurance	3
MATH 307	Multivariate Calculus	4

STAT 309	Introduction to Probability Theory	3
Term Hours:		16

Junior year

Fall semester

CMSC 330	Data Science Skills	3
FIRE 311	Financial Management	3
FIRE 479	Managing Financial Risk	3
STAT 321	Introduction to Statistical Computing	3
	General education course	3
Term Hours:		15

Spring semester

ECON 501	Introduction to Econometrics	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
INFO 360	Business Information Systems	3
	Open elective	3
Term Hours:		15

Senior year

Fall semester

FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 451	Options, Futures and Swaps	3
	Concentration elective	3
	Open elective	3
Term Hours:		15

Spring semester

FIRE 441	Funds Management in Financial Institutions	3
FIRE 540	Financial Analytics	3
INFO 320	Business Intelligence and Data Mining	3
	Concentration elective	3
	Open elective	3
Term Hours:		15

Total Hours: 123

The minimum number of credit hours required for this degree is 123.

Real Estate, Bachelor of Science (B.S.)

The major in real estate prepares students for the graduate-level study of real estate, economics and finance, as well as careers in land development, brokerage, valuation and investment counseling, site analysis and selection, real property management, mortgage lending, and bank trust and corporate real estate departments, in addition to other real estate-related careers in the public and private sectors.

Learning goals

- To support career advancement over time by giving students the academic foundation in information systems needed for continued professional development
- To help students develop the professional skills that will be needed by the businesses and organizations that hire graduates
- To help students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace.

- To ensure that students understand and can apply appropriate analytical methodologies and technology to the discipline of real estate.
- To prepare students for professional licensing, certification and/or professional designations

Student learning outcomes

Upon completing this program:

- Graduates will understand the legal foundations of real estate including contracts, options, title transfer, easements, conveyances, liens and recording statutes. Students will also understand ethical decision-making in the context of identifying ethical standards and establishing a framework for making ethical decisions.
- Graduates will be able to apply mathematical techniques to real estate financial analysis, including the financing process, mortgage risk analysis and loan underwriting.
- Graduates will be able to apply the highest and best use analysis (cost, market and income approaches) in valuing real estate property and will be able to understand/calculate the mathematics of yield capitalization.
- Graduates will be able to apply appropriate skills in evaluating real estate investments. This includes a multidisciplinary approach to financial, spatial and social economics.

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Students must receive a minimum grade of C in FIRE 305, FIRE 325, FIRE 425, FIRE 435 and FIRE 445, and must have a minimum GPA of 2.0 in the remainder of the real estate major electives.

Degree requirements for Real Estate, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
FIRE 305	Principles of Real Estate	3
FIRE 312	Financial Modeling	3
FIRE 325	Real Estate Law	3
FIRE 425	Real Estate Appraisal	3
FIRE 435	Real Estate Finance and Capital Markets	3
FIRE 445	Real Estate Investment Analysis	3
• Major electives		
Real estate electives (select from list below)		15
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
Open electives		

Select any course. ²	17
Total Hours	120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Real estate electives

Course	Title	Hours
BUSN 400	Principles of Consulting	3
BUSN 401	International Consulting Practicum	3
ECON 305	Public Finance	3
ECON 307	Money and Banking	3
FIRE 309	Risk Management and Insurance	3
FIRE 315	Real Property Management	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 429	Property and Liability Insurance	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3
FIRE 492	Independent Study in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate	3
MGMT 491	Topics in Management	1-3
MKTG 315	Buyer Behavior	3
MKTG 325	Business-to-business Marketing	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
URSP 304	Urban Social Systems	3
URSP 306	Economic Geography	3
URSP 310	Introduction to Urban and Regional Planning	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as an open elective)	3
General education course		3
General education course		3
General education course		3
Term Hours:		15
Spring semester		
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
General education course		3
Open elective		3
Term Hours:		15
Sophomore year		
Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
FIRE 305	Principles of Real Estate	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		16
Junior year		
Fall semester		
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3

Open electives	5
Term Hours:	14
Spring semester	
FIRE 312 Financial Modeling	3
FIRE 325 Real Estate Law	3
INFO 360 Business Information Systems	3
SCMA 320 Production/Operations Management	3
Real estate elective	3
Term Hours:	15
Senior year	
Fall semester	
BUSN 499 Business Knowledge Exam	0
FIRE 425 Real Estate Appraisal	3
FIRE 435 Real Estate Finance and Capital Markets	3
Open elective	3
Real estate electives	6
Term Hours:	15
Spring semester	
FIRE 445 Real Estate Investment Analysis	3
MGMT 434 Strategic Management	3
Open elective	3
Real estate electives	6
Term Hours:	15
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Actuarial science, minor in

The minor in actuarial science prepares students for the two actuarial exams and part of the college courses required for a designation of Associate of the Society of Actuaries, Casualty Actuarial Society or Canadian Institute of Actuaries. Specifically the minor provides students with intense background in principles of actuarial models and opens a broad path to an actuarial professional world.

The minor in actuarial science is for non-actuarial science majors and requires a minimum of 18 credits. Required courses account for six credits and four electives complete the minor as outlined below. Students must attain a minimum cumulative GPA of 2.5 in these courses.

Students should take MATH 200 with a minimum grade of B, as it is a prerequisite for the actuarial science required courses.

Course	Title	Hours
Required courses		
FIRE 319	Financial Mathematics	3
FIRE 320	Actuarial Probability Concepts	3
Electives		
Select four.		12
ACCT 203	Introduction to Accounting I	
ACCT 204	Introduction to Accounting II	
FIRE 309	Risk Management and Insurance	
ECON 210	Principles of Microeconomics	
ECON 211	Principles of Macroeconomics	
FIRE 311	Financial Management	

FIRE 312	Financial Modeling	
FIRE 321	Intermediate Financial Management	
FIRE 451	Options, Futures and Swaps	
MATH 200	Calculus with Analytic Geometry I	
MATH 201	Calculus with Analytic Geometry II	
MATH courses (300+ level)		
STAT 310	Introduction to Statistical Inference	
STAT courses (200+ level)		
Total Hours		18

Real estate, minor in

A minor in real estate requires 18 credits as outlined below.

Course	Title	Hours
Required courses ¹		
		9
FIRE 305	Principles of Real Estate	
FIRE 425	Real Estate Appraisal	
FIRE 435	Real Estate Finance and Capital Markets	
Real estate electives ²		3-9
Choose at least one of the following:		
FIRE 315	Real Property Management	
FIRE 325	Real Estate Law	
FIRE 445	Real Estate Investment Analysis	
Free electives ²		0-6
Choose up to two of the following:		
BUSN 323	Legal Environment of Business	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 302	Macroeconomic Theory	
FIRE 309	Risk Management and Insurance	
FIRE 311	Financial Management	
FIRE 312	Financial Modeling	
FIRE 317	Investments	
FIRE 429	Property and Liability Insurance	
FIRE 451	Options, Futures and Swaps	
FIRE 461	Cases in Financial Management	
FIRE 492	Independent Study in Finance, Insurance and Real Estate	
FIRE 493	Internship in Finance, Insurance and Real Estate	
MGMT 310	Managing People in Organizations	
MGMT 319	Leadership	
MGMT 434	Strategic Management	
MGMT 491	Topics in Management	
MKTG 301	Marketing Principles	
MKTG 315	Buyer Behavior	
MKTG 335	Introduction to Personal Selling	
MKTG 435	Selling in the Business Marketplace	
SCMA 301	Business Statistics I	
SCMA 302	Business Statistics II	

URSP 310	Introduction to Urban and Regional Planning	
URSP 360	Community and Regional Analysis and GIS	
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	
Total Hours		18

1

Any co- or prerequisites must also be satisfied. Students must earn a minimum grade of C in the required courses.

2

Any co- or prerequisites must also be satisfied.

Risk management and insurance, minor in

The minor in risk management and insurance provides students with the skills necessary for success in risk management as it applies to individuals and enterprises. Careers in the RMI industry include the private sector, government agencies and nonprofit organizations. Students gain insights into managing property, liability, life-cycle risks (life, health, disability and pensions), financial risks, and cyber risks. InsurTech, the intersection of insurance and technology, is another dimension of the minor that is taught.

Finance majors with a concentration in risk management and insurance are not eligible to complete this minor.

The minor requires a minimum of 18 credits and students must attain a minimum cumulative GPA of 2.0 in the courses fulfilling the minor.

Students should take FIRE 309 (<http://bulletin.vcu.edu/azcourses/fire/>) first, as it is a prerequisite for the other RMI courses.

Course	Title	Hours
Required courses		
FIRE 309	Risk Management and Insurance	3
FIRE 429	Property and Liability Insurance	3
FIRE 439	Life Cycle Risk Management	3
FIRE 459	Insurance Law	3
Electives		
Select two:		6
BUSN 323	Legal Environment of Business	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 302	Macroeconomic Theory	
FIRE 301	Personal Financial Planning	
FIRE 305	Principles of Real Estate	
FIRE 311	Financial Management	
FIRE 312	Financial Modeling	
FIRE 317	Investments	
FIRE 492	Independent Study in Finance, Insurance and Real Estate	
HSEP 302	Emergency Planning and Incident Management	

HSEP 310	Risk and Vulnerability Assessment
MGMT 310	Managing People in Organizations
MGMT 319	Leadership
MGMT 434	Strategic Management
MKTG 301	Marketing Principles
MKTG 335	Introduction to Personal Selling
MKTG 435	Selling in the Business Marketplace
SCMA 301	Business Statistics I
SCMA 302	Business Statistics II

Total Hours **18**

Department of Information Systems

Jim Wynne, Ph.D.

Associate professor and interim chair

business.vcu.edu/academics/information-systems (<https://business.vcu.edu/academics/information-systems/>)

The Department of Information Systems provides an innovative, high quality curriculum that is recognized nationally and internationally and maintains the ability to rapidly respond to the dynamic, changing needs of the academic discipline, industry and community.

The department offers degree programs at both the undergraduate and graduate level, as well as continuing education programs that support alumni and the community. Additionally, courses in information systems are offered to meet the needs of students in other curricula offered by the university as well as those who are seeking to enhance their knowledge of information systems.

Departmental faculty offers expertise in information technology and has wide-ranging research and teaching interests. As part of the department, the Information Systems Research Institute provides opportunities for sponsored research, innovative teaching initiatives and faculty development.

- Information Systems, Bachelor of Science (B.S.) (p. 497)
- Information Systems, Certificate in (Post-baccalaureate undergraduate certificate) (p. 501)

Information Systems, Bachelor of Science (B.S.)

The mission of the Bachelor of Science in Information Systems is to prepare students for successful careers as information systems professionals through a curriculum that combines technical computing knowledge, skills and techniques with relevant business knowledge.

INFO 202 and MATH 211 are prerequisites for many upper-level information systems courses. Students may wish to choose their upper-level information systems electives to gain enhanced proficiency in the following areas:

Course	Title	Hours
Application development		
INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3
Business analysis		
INFO 463	Business Process Engineering	3

INFO 468	Information Engineering	3
Information and communications technology		
INFO 472	Infrastructure Services	3
INFO 474	Advanced Networking and Security	3

Learning goals

The major in information systems provides a curriculum in which:

- Graduates will have the ability to apply the most current technologies to support the secure delivery and management of information systems.
- Graduates will have the academic foundation that enables them to advance their careers through continuing education and professional development.
- Graduates will have the knowledge and ability to work effectively to support the information systems needs of the business community.

Student learning outcomes

Upon completing this program, students will have an ability to:

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
- Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
- Communicate effectively in a variety of professional contexts
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
- Support the delivery, use and management of information systems within an information systems environment

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201, or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 100, UNIV 101, UNIV 102 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

A maximum of six credits in INFO 491 may be applied to the degree.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Degree requirements for Information Systems, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
INFO 300	Information Technology Infrastructure	3
INFO 320	Business Intelligence and Data Mining	3
INFO 350	Programming	3
INFO 361	Systems Analysis and Design	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 461	Information Systems Planning and Project Management	3
INFO 465	Projects in Information Systems	3
• Major electives		
Select courses from the list below.		6
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
INFO 202	Introduction to E-business Technologies	3
INFO 360	Business Information Systems	3
MATH 211	Mathematical Structures	3
MKTG 301	Marketing Principles	3
MGMT 303	Creativity and Ideation	3

MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business Real Estate Law Insurance Law	3
Open electives		
Select any course. ²		11
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.**Major electives**

Course	Title	Hours
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (if this option is chosen, both must be taken)	6
INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3
INFO 463	Business Process Engineering	3
INFO 468	Information Engineering	3
INFO 472	Infrastructure Services	3
INFO 474	Advanced Networking and Security	3
INFO 481	Information Technology Auditing	3
INFO 482	Introduction to Enterprise Resource Planning Systems	3
INFO 491	Topics in Information Systems	1-3
INFO 492	Independent Study in Information Systems (requires departmental approval)	1-3
INFO 493	Internship in Information Systems (requires departmental approval)	3
SCMA 430	Data Management and Visualization	3
SCMA 440	Data Mining and Forecasting	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3
	General education course	3
	General education course	3
	General education course	3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
	General education course	3
	Open elective	3
Term Hours:		15

Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/ behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
INFO 202	Introduction to E-business Technologies	3
MATH 211	Mathematical Structures	3
MKTG 301	Marketing Principles	3
Term Hours:		16

Junior year

Fall semester		
INFO 300	Information Technology Infrastructure	3
INFO 360	Business Information Systems	3
INFO 361	Systems Analysis and Design	3
MGMT 310	Managing People in Organizations	3

SCMA 301	Business Statistics I	3
Term Hours:		15
Spring semester		
INFO 350	Programming	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 461	Information Systems Planning and Project Management	3
SCMA 320	Production/Operations Management	3
Term Hours:		15
Senior year		
Fall semester		
BUSN 323	Legal Environment of Business	3
or	or Real Estate Law	
FIRE 325	or Insurance Law	
or		
FIRE 459		
FIRE 311	Financial Management	3
INFO 320	Business Intelligence and Data Mining	3
MGMT 303	Creativity and Ideation	3
Open elective		3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
INFO 465	Projects in Information Systems	3
MGMT 434	Strategic Management	3
Major electives		6
Open elective		2
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Information Systems in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 credit hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 139 credits rather than the 151 credits necessary if the two degrees are pursued separately.

Students holding these degrees are prepared for management-level positions in information systems and information technology. Students will focus on practical application of the knowledge gained in the classroom with an emphasis on creativity, innovation and leadership skills.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including INFO 300, INFO 361 and INFO 364; an overall GPA of 3.25; and a GPA of 3.25 in information systems course work. Successful applicants would enter the program in the fall semester of their senior year (or equivalent). Students

who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for spring semester admission and no later than July 1 for fall semester admission.

Three reference letters (at least one from an information systems faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the faculty adviser to the master's program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate information systems adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Information Systems degree will be awarded upon completion of a minimum of 121 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin. This is one additional credit hour than required for the standalone Bachelor of Science in Information Systems due to the inclusion of INFO 493 which is required for accelerated B.S. to M.S. students.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for required major elective courses or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate information systems courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
INFO 610	Analysis and Design of Database Systems	3
INFO 620	Data Communications	3
INFO 630	Systems Development	3
Graduate program elective		3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
INFO 300	Information Technology Infrastructure	3
INFO 361	Systems Analysis and Design	3
MGMT 310	Managing People in Organizations	3
SCMA 301	Business Statistics I	3

SCMA 320	Production/Operations Management	3
Term Hours:		15
Spring semester		
FIRE 311	Financial Management	3
INFO 350	Programming	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 461	Information Systems Planning and Project Management	3
Term Hours:		15
Senior year		
Fall semester		
BUSN 323	Legal Environment of Business	3
or FIRE 325	Real Estate Law	
or FIRE 429	Property and Liability Insurance	
INFO 320	Business Intelligence and Data Mining	3
INFO 610	Analysis and Design of Database Systems	3
INFO 620	Data Communications	3
MGMT 303	Creativity and Ideation	3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
INFO 465	Projects in Information Systems	3
INFO 493	Internship in Information Systems ¹	3
INFO 630	Systems Development	3
Graduate program elective		3
Term Hours:		15
Fifth year		
Fall semester		
INFO 640	Information Systems Management	3
INFO 644	Principles of Computer and Information Systems Security	3
Graduate program elective		3
Term Hours:		9
Spring semester		
Graduate program electives		9
Term Hours:		9

1

INFO 493 is required for accelerated program students. Students will take this in the open elective slot (typically two credits) in the senior year of study. Because INFO 493 is a three-credit course, a student in the accelerated program will take one additional credit hour than is required for the standalone baccalaureate program.

Information Systems, Certificate in (Post-baccalaureate undergraduate certificate)

The Certificate in Information Systems is designed for students who hold bachelor's degrees in fields other than information systems and who wish to continue their education in information systems but are not pursuing a graduate degree at this time. Candidates for the certificate are required to complete a total of 30 hours beyond the bachelor's degree,

including the courses listed below or their equivalents, with a minimum of 24 credit hours of study in information systems to be taken while in the undergraduate certificate program at VCU.

The certificate is designed to provide more than a basic knowledge of information systems. Specifically, persons completing the program are expected to achieve competency in understanding information systems terminology, concepts and principles; computer program design, writing and testing; systems analysis/design through proper application and knowledge of current hardware and software; and planning and carrying out system development and the management of information systems. Students acquiring these skills are well-received in the business community and in governmental organizations.

For additional information, please visit the School of Business website (<https://business.vcu.edu/academics/information-systems/post-baccalaureate-certificate-in-information-systems/>).

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply computer hardware and software knowledge in support of organizational systems
- Apply the appropriate programming language skills to solve the computing requirements appropriate to its solution
- Analyze, design, implement and evaluate a computer-based system, process component or program to meet the desired needs of an organization
- Understand the fundamentals of data management and analyze and build databases to meet organizational needs
- Identify the basic components, functions and types of telecommunications networks (hardware, software, media and services) used in organizations, as well as identify major developments in these technologies and the appropriate applications of them
- Identify the characteristics that affect the choice of IT applications, IT platforms, data access policies and systems-development methods that impact the performance of IS systems in organizations
- Understand basic principles of good project management

Special requirements

Students cannot be accepted into the program until they have completed all the requirements for their bachelor's degree and have achieved a minimum 2.5 GPA in their undergraduate work.

After acceptance in the program, certificate candidates are required to complete a minimum of 24 credit hours of their program at VCU.

Academic regulations for School of Business post-baccalaureate undergraduate certificates

The School of Business has specific academic regulations (p. 471) that apply to students in the undergraduate certificate program.

INFO 160 is a prerequisite for INFO 202. INFO 202 is a prerequisite for INFO 350, INFO 364 and INFO 370. MATH 211 is a prerequisite for INFO 350, INFO 364 and INFO 370. INFO 202 and MATH 211 cannot be used as electives within the information systems post-baccalaureate program. Exceptions to prerequisite courses require recommendation of the adviser and permission of the department chair.

Degree requirements for Information Systems, Certificate in (Post-baccalaureate undergraduate certificate)

Required courses (24-credit minimum) ¹

Course	Title	Hours
BUSN 323	Legal Environment of Business	3
INFO 300	Information Technology Infrastructure	3
INFO 350	Programming	3
INFO 361	Systems Analysis and Design	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 461	Information Systems Planning and Project Management	3
INFO 465	Projects in Information Systems	3

Electives

Course	Title	Hours
Approved upper-level electives		6

The minimum total of credit hours required for this certificate is 30.

¹

Students who receive waivers for any required courses must complete additional approved upper-level information system electives to total 30 credits.

Sample outline

(Most students are enrolled part time. Students planning full-time enrollment should consult with the program adviser.)

Year one

Fall semester		Hours
INFO 300	Information Technology Infrastructure	3
INFO 361	Systems Analysis and Design	3
Term Hours:		6

Spring semester

INFO 350	Programming	3
INFO 364	Database Systems	3
Term Hours:		6

Year two

Fall semester		Hours
BUSN 323	Legal Environment of Business	3
INFO 370	Fundamentals of Data Communications	3
Term Hours:		6

Spring semester

INFO 461	Information Systems Planning and Project Management	3
Approved upper-level elective		3
Term Hours:		6

Year three

Fall semester		Hours
INFO 465	Projects in Information Systems	3

Approved upper-level elective	3
Term Hours:	6
Total Hours:	30

The minimum total of credit hours required for this certificate is 30.

Department of Management and Entrepreneurship

S. Douglas Pugh, Ph.D.

Professor and chair

business.vcu.edu/academics/management-and-entrepreneurship
(<https://business.vcu.edu/academics/management-and-entrepreneurship/>)

The Department of Management and Entrepreneurship offers a Bachelor of Science in Business with concentrations in human resource management, management/business administration, management/entrepreneurship and management/international management. The department also offers a human resource management minor and a certificate in international management studies, as well as a doctoral degree in business with a concentration in management.

- Business, Bachelor of Science (B.S.) with a concentration in human resource management (p. 502)
- Business, Bachelor of Science (B.S.) with a concentration in management/business administration (p. 505)
- Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship (p. 507)
- Business, Bachelor of Science (B.S.) with a concentration in management/international management (p. 510)

- Entrepreneurship, minor in (p. 512)
- Human resource management, minor in (<http://bulletin.vcu.edu/undergraduate/business/management/human-resource-management-minor/>)

Business, Bachelor of Science (B.S.) with a concentration in human resource management

The concentration in human resource management gives students a broad overview of the knowledge base and applications used by professionals in the field. Students receive exposure to a wide range of topics reflecting the body of knowledge required for the Professional in Human Resources certification exam administered by the HR Certification Institute. After graduation, students are prepared for employment in the public or private sector as human resource management generalists or as specialists in human resource management functions such as recruiting, compensation management or benefits administration.

Learning goals

The goal of the curriculum for the human resource management concentration is for students to understand human resource management concepts and principles needed to design and implement policies and practices that enhance an organization's ability to attract, motivate, develop and retain effective employees.

1. General management competencies
Graduates will develop skills in managing people and other resources to help achieve organizational goals.
2. Analytical competencies
Graduates will have quantitative and analytical skills that can be applied to the solution of managerial problems.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Depth of knowledge
Demonstrate an understanding of fundamental concepts of management that relate to the shaping of employee behaviors toward the achievement of organizational goals
2. Communication skills
Communicate a personal leadership vision that reflects self-awareness, knowledge of leadership theories and concepts, and appropriate oral communication skills
3. Analytic skills
Use knowledge of human resource management concepts and data to suggest solutions to management problems
4. Quantitative skills
Identify and use relevant data to help make informed decisions about management issues

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in human resource management

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
• Concentration requirements		
MGMT 331	Human Resource Management	3
MGMT 332	Staffing Organizations	3
MGMT 333	Compensation Management	3
MGMT 431	Strategic Human Resource Management	3
• Major electives		
General management elective (select from list below)		3
Global elective (select from list below)		3
Human resources electives (select from list below)		6
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) Calculus with Analytic Geometry I	3-4
BUSN 323	Legal Environment of Business	3
INFO 360	Business Information Systems	3

Open electives	
Select any course. ²	17
Total Hours	120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved general management electives

Course	Title	Hours
BUSN 400	Principles of Consulting	3
FIRE 309	Risk Management and Insurance	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 389	Managerial Skills Development	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
SCMA 350	Introduction to Project Management	3

Approved global electives

Course	Title	Hours
BUSN 329	Introduction to Intercultural Communication	3
BUSN 401	International Consulting Practicum	3
ECON/INTL 329	International Economics	3
MGMT/INTL 418	International Management	3
MGMT/INTL 446	International Human Resource Management	3
MKTG/INTL 320	International Marketing	3

Approved human resource electives

Course	Title	Hours
FIRE 444	Occupational Safety, Health and Security	3
FIRE 449	Employee Benefit Planning	3
MGMT 403	Human Resource Development	3
MGMT 405	Negotiation, Influence and Conflict Management	3
MGMT 447	Human Resource Information Systems	3
MGMT 493	Internship in Management	3
PSYC 310	Industrial Psychology	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
BUSN 171 Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3

UNIV 111 Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I	
General education course	3
General education course	3
General education course	3

Term Hours: 15

Spring semester

BUSN 212 Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225 Winning Presentations	3
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II	
General education course	3
Open elective	3

Term Hours: 15

Sophomore year

Fall semester

ACCT 203 Introduction to Accounting I	3
BUSN 201 Foundations of Business or Introduction to the World of Business or BUSN 205	3
ECON 210 Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course	3

Term Hours: 15

Spring semester

ACCT 204 Introduction to Accounting II	3
BUSN 301 Career and Professional Development	1
ECON 211 Principles of Macroeconomics	3
SCMA 301 Business Statistics I	3
Open elective	5

Term Hours: 15

Junior year

Fall semester

BUSN 323 Legal Environment of Business	3
FIRE 311 Financial Management	3
INFO 360 Business Information Systems	3
MGMT 310 Managing People in Organizations	3
MGMT 331 Human Resource Management	3

Term Hours: 15

Spring semester

MGMT 303 Creativity and Ideation	3
MGMT 319 Leadership	3

MGMT 332	Staffing Organizations	3
MGMT 333	Compensation Management	3
SCMA 302	Business Statistics II	3
Term Hours:		15
Senior year		
Fall semester		
MGMT 431	Strategic Human Resource Management	3
MKTG 301	Marketing Principles	3
SCMA 320	Production/Operations Management	3
Human resources elective		3
Open electives		3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
MGMT 434	Strategic Management	3
General management elective		3
Global elective		3
Human resources elective		3
Open elective		3
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Business, Bachelor of Science (B.S.) with a concentration in management/business administration

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/business administration concentration provides students with a broad-based study of management and other business disciplines. The course options in the curriculum give students flexibility in developing a program of study that can lead to a variety of entry-level positions in private and public organizations.

Learning goals

The goal of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

1. General management competencies
Graduates will develop skills in managing people and other resources to help achieve organizational goals.
2. Analytical competencies
Graduates will have quantitative and analytical skills that can be applied to the solution of managerial problems.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Depth of knowledge
Demonstrate an understanding fundamental concepts of management that relate to the shaping of employee behaviors toward the achievement of organizational goals
2. Communication skills
Communicate a personal leadership vision that reflects self-awareness, knowledge of leadership theories and concepts, and appropriate oral communication skills
3. Analytic skills
Use knowledge of human resource management concepts and data to suggest solutions to management problems
4. Quantitative skills
Identify and use relevant data to help make informed decisions about management issues

Special requirements

The **admission requirements for the School of Business** detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, SCMA 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special **academic policies**, including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16x Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in management/business administration

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		

MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
• Concentration requirements		
MGMT 321	Survey of Entrepreneurship	3
MGMT 331	Human Resource Management	3
MGMT 405	Negotiation, Influence and Conflict Management	3
• Major electives		
Financial markets elective (select from list below)		3
Global elective (select from list below)		3
Management elective (select from list below)		3
Supply chain and analytics elective (select from list below)		3
Systems and marketing elective (select from list below)		3
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) ² Calculus with Analytic Geometry I	3-4
BUSN 323	Legal Environment of Business	3
INFO 360	Business Information Systems	3
Open electives		
Select any course. ²		17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.**Approved financial markets electives**

Course	Title	Hours
ECON 303	Managerial Economics	3
ECON 307	Money and Banking	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk Management and Insurance	3
FIRE 317	Investments	3

Approved global electives

Course	Title	Hours
BUSN 329	Introduction to Intercultural Communication	3
or INTL 327	Introduction to Intercultural Communication	
BUSN 401	International Consulting Practicum	3
ECON/INTL 329	International Economics	3
FIRE 316	International Financial Management	3
MGMT/INTL 418	International Management	3
MKTG/INTL 320	International Marketing	3

Approved management electives

Course	Title	Hours
BUSN 400	Principles of Consulting	3
MGMT 332	Staffing Organizations	3
MGMT 333	Compensation Management	3
MGMT 389	Managerial Skills Development	3
MGMT 423	Social Entrepreneurship and Innovation	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
MGMT 493	Internship in Management	3

Approved supply chain and analytics electives

Course	Title	Hours
SCMA 303	Business Analytics	3
SCMA 339	Quantitative Solutions for Supply Chain Management	3
SCMA 350	Introduction to Project Management	3
SCMA 386	Global Supply Chain Management	3
SCMA 410	Logistics and Distribution Strategy	3
SCMA 420	Strategic Sourcing	3

Approved systems and marketing electives

Course	Title	Hours
INFO 361	Systems Analysis and Design	3
INNO 460	Product Innovation: da Vinci Project	3
MKTG 315	Buyer Behavior	3
MKTG 442	Services Marketing	3
MKTG 450	Product Development and Management	3
MKTG 330	Integrated Marketing Communications	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

		Hours
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course	3
	General education course	3
	General education course	3

Term Hours: 15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course	3
	Open elective	3

Term Hours: 15

Sophomore year**Fall semester**

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business	3
	or Introduction to the World of Business	
BUSN 205		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3

Term Hours: 15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
BUSN 323	Legal Environment of Business	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3

Term Hours: 16

Junior year**Fall semester**

MGMT 303	Creativity and Ideation	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 310	Managing People in Organizations	3
MGMT 331	Human Resource Management	3

SCMA 302	Business Statistics II	3
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Term Hours: 15

Spring semester

FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 320	Production/Operations Management	3
	Open elective	3

Term Hours: 15

Senior year**Fall semester**

BUSN 499	Business Knowledge Exam	0
MGMT 405	Negotiation, Influence and Conflict Management	3

	Global elective	3
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	Open elective	5
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	Supply chain and analytics elective	3
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Term Hours: 14

Spring semester

MGMT 434	Strategic Management	3
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	Financial market elective	3
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	Management elective	3
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	Open elective	3
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	Systems and marketing elective	3
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Term Hours: 15

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/entrepreneurship concentration empowers students to develop an entrepreneurial mindset and complementary skill set needed to provide creative solutions for new ventures and existing organizations. Students gain knowledge of entrepreneurial and design concepts useful for questioning assumptions, exploring alternatives and developing creative solutions.

Learning goals

The goal of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

1. General management competencies
Graduates will develop skills in managing people and other resources to help achieve organizational goals.
2. Analytical competencies

Graduates will have quantitative and analytical skills that can be applied to the solution of managerial problems.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Depth of knowledge
Demonstrate an understanding fundamental concepts of management that relate to the shaping of employee behaviors toward the achievement of organizational goals
2. Communication skills
Communicate a personal leadership vision that reflects self-awareness, knowledge of leadership theories and concepts, and appropriate oral communication skills
3. Analytic skills
Use knowledge of human resource management concepts and data to suggest solutions to management problems
4. Quantitative skills
Identify and use relevant data to help make informed decisions about management issues

Special requirements

The **admission requirements for the School of Business** detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: **ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200**

The School of Business has special **academic policies**, including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in **BUSN 499**.

Students may need to take additional mathematics courses as prerequisites to **BUSN 212** or **MATH 200**. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16x Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for **SPCH 121** or **SPCH 321** will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
• Concentration requirements		
MGMT 313	Entrepreneurial Finance	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 331	Human Resource Management	3
MGMT 405	Negotiation, Influence and Conflict Management	3
MGMT 435 & MGMT 436	New Venture Strategy and Initiation and New Venture Strategy and Initiation	6
• Major electives		
Entrepreneurship electives (select from list below)		6
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) ² Calculus with Analytic Geometry I	3-4
BUSN 323	Legal Environment of Business	3
INFO 360	Business Information Systems	3
Open electives		
Select any course. ²		17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved entrepreneurship electives

Course	Title	Hours
BUSN 400	Principles of Consulting	3
BUSN 401	International Consulting Practicum	3
MGMT 389	Managerial Skills Development	3
FIRE 305	Principles of Real Estate	3
INFO 320	Business Intelligence and Data Mining	3
INFO 361	Systems Analysis and Design	3
MGMT 423	Social Entrepreneurship and Innovation	3
MKTG 315	Buyer Behavior	3
MKTG 330	Integrated Marketing Communications	3
MKTG 335	Introduction to Personal Selling	3
MKTG 450	Product Development and Management	3
SCMA 386	Global Supply Chain Management	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course	3
	General education course	3
	General education course	3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course	3
	Open elective	3
Term Hours:		15

Sophomore year

Fall semester

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business	3
or	or Introduction to the World of Business	
BUSN 205		
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3

Term Hours: 15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
BUSN 323	Legal Environment of Business	3
ECON 211	Principles of Macroeconomics	3
SCMA 301	Business Statistics I	3
	Open elective	3

Term Hours: 16

Junior year

Fall semester

FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 321	Survey of Entrepreneurship	3
SCMA 302	Business Statistics II	3

Term Hours: 15

Spring semester

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MGMT 331	Human Resource Management	3
MKTG 301	Marketing Principles	3
SCMA 320	Production/Operations Management	3

Term Hours: 15

Senior year

Fall semester

MGMT 313	Entrepreneurial Finance	3
MGMT 435	New Venture Strategy and Initiation	3
MGMT 405	Negotiation, Influence and Conflict Management	3
	Entrepreneurship elective	3
	Open elective	3

Term Hours: 15

Spring semester

BUSN 499	Business Knowledge Exam	0
MGMT 434	Strategic Management	3
MGMT 436	New Venture Strategy and Initiation	3
	Entrepreneurship elective	3

Open elective	5
Term Hours:	14
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Business, Bachelor of Science (B.S.) with a concentration in management/international management

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/international management concentration allows students to pursue an interest in the global nature of today's business world. A variety of opportunities for international study within and outside the university are available. Students in the management/international management concentration are encouraged to enrich their learning experience by pursuing a minor in international studies or foreign language, studying abroad through the Consortium International University or taking approved courses outside the School of Business.

Learning goals

The goal of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

1. General management competencies
Graduates will develop skills in managing people and other resources to help achieve organizational goals.
2. Analytical competencies
Graduates will have quantitative and analytical skills that can be applied to the solution of managerial problems.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Depth of knowledge
Demonstrate an understanding fundamental concepts of management that relate to the shaping of employee behaviors toward the achievement of organizational goals
2. Communication skills
Communicate a personal leadership vision that reflects self-awareness, knowledge of leadership theories and concepts, and appropriate oral communication skills
3. Analytic skills
Use knowledge of human resource management concepts and data to suggest solutions to management problems
4. Quantitative skills
Identify and use relevant data to help make informed decisions about management issues

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to

one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in international management

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
• Concentration requirements		
ECON/INTL 329	International Economics	3
MGMT 331	Human Resource Management	3
MGMT 405	Negotiation, Influence and Conflict Management	3
MGMT/INTL 418	International Management	3
MKTG/INTL 320	International Marketing	3
• Major electives		
International management elective (select from the list below)		9
Ancillary requirements		
• Ancillary core requirements		

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) Calculus with Analytic Geometry I	3
BUSN 323	Legal Environment of Business	3
Open electives		
Select any course ²		17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives

2

Students may choose electives to reach the minimum total of 120 credits

The minimum number of credit hours required for this degree is 120.

International management electives

Course	Title	Hours
BUSN 329/INTL 327	Introduction to Intercultural Communication	3
BUSN 400	Principles of Consulting	3
BUSN 401	International Consulting Practicum	3
FIRE 316/INTL 416	International Financial Management	3
MGMT/INTL 446	International Human Resource Management	3
MGMT 491	Topics in Management (variable, with no more than 6 credits total)	1-3
MGMT 493	Internship in Management	3
MKTG 448	Digital Marketing	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course	3
	General education course	3
	General education course	3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	General education course	3
	Open elective	3
Term Hours:		15

Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
BUSN 323	Legal Environment of Business	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
	Open elective	3
Term Hours:		16

Junior year

Fall semester		Hours
FIRE 311	Financial Management	3

MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 331	Human Resource Management	3
SCMA 301	Business Statistics I	3
Term Hours:		15
Spring semester		
ECON/INTL 329	International Economics	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
	International management elective	3
Term Hours:		15
Senior year		
Fall semester		
BUSN 499	Business Knowledge Exam	0
MGMT 405	Negotiation, Influence and Conflict Management	3
MGMT 418	International Management	3
SCMA 320	Production/Operations Management	3
	International management elective	3
	Open elective	3
Term Hours:		15
Spring semester		
MGMT 434	Strategic Management	3
MKTG/INTL 320	International Marketing	3
	International management elective	3
	Open elective	5
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Entrepreneurship, minor in

The entrepreneurship minor empowers students to develop an entrepreneurial mindset and complementary skill set needed to provide creative solutions for new ventures and existing organizations. Students gain knowledge of entrepreneurial and design concepts useful for questioning assumptions, exploring alternatives and developing creative solutions.

Course	Title	Hours
Foundation courses ¹		
MGMT 303	Creativity and Ideation	3
MGMT 321	Survey of Entrepreneurship	3
Required courses ²		
MGMT 435	New Venture Strategy and Initiation	3
MGMT 436	New Venture Strategy and Initiation	3
Approved electives		
Select two from the following:		6
BUSN 323	Legal Environment of Business	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	

FIRE 305	Principles of Real Estate	
FIRE 309	Risk and Insurance	
MGMT 319	Leadership	
MGMT 331	Human Resource Management	
MGMT 423	Social Entrepreneurship and Innovation	
MGMT 493	Internship in Management	
MKTG 301	Marketing Principles	
SCMA 350	Introduction to Project Management	
Total Hours		18

1

Students should take these courses first. MGMT 321 must be taken in the junior year, as it is a prerequisite to MGMT 435 and MGMT 436, which are taken sequentially as a yearlong capstone course in the senior year.

2

Continuous courses; MGMT 435 is taken in the fall semester followed by MGMT 436 in the spring semester.

Department of Marketing

Bruce Huhmann, Ph.D.
Professor and chair

business.vcu.edu/academics/marketing (<https://business.vcu.edu/academics/marketing/>)

The Department of Marketing provides students with a comprehensive introduction to the many topics and concepts that make up today's marketing professions. Additionally students have the opportunity to participate in high quality learning experiences that broaden traditional ideas of the classroom in projects, exercises and internship experiences that involve a variety of business organizations as well as state and local government agencies.

- Marketing, Bachelor of Science (B.S.) with a concentration in general marketing (p. 512)
- Marketing, Bachelor of Science (B.S.) with a concentration in marketing communication and analytics (p. 515)
- Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management (p. 518)
- Marketing insights, minor in (p. 520)
- Sales, minor in (p. 521)

Marketing, Bachelor of Science (B.S.) with a concentration in general marketing

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The general marketing concentration provides students an understanding of the processes of creating and communicating value for customers, clients and society at large. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

Learning goals

The B.S. in Marketing program:

- Provides students with a broad knowledge of marketing concepts and practices needed in the increasingly diverse domestic and global marketplace
- Prepares students to apply analytical tools to creatively solve marketing problems

Student learning outcomes

Upon completing this program, students will know how to do the following:

1. Identify marketing problems and evaluate alternative solutions
2. Demonstrate research design and analysis skills needed to conduct impactful marketing research
3. Know and apply consumer behavior concepts and the factors that affect consumer decision-making
4. Understand and apply fundamental marketing concepts and strategies in the international marketplace

Special requirements

The admission requirements for the School of Business (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16x Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in general marketing

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MKTG 302	Marketing and Brand Strategy	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
• Additional major requirements		
MKTG 310	Marketing Research	3
• Major electives		
Marketing electives (select from list below)		18
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
BUSN 323	Legal Environment of Business	3
or FIRE 325	Real Estate Law	
or FIRE 459	Insurance Law	
INFO 360	Business Information Systems	3
or ACCT 307	Accounting Systems	
Open electives		
Select any course. ²		17
Total Hours		120

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Marketing electives

Course	Title	Hours
MKTG 325	Business-to-business Marketing	3
MKTG 330	Integrated Marketing Communications	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 350	Customer and Marketing Analytics	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 485	Internship in Selling	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3
MKTG 493	Internship in Marketing	3
	Students may select up to six credits from the following (each course should be worth three credits): ¹	6
ACCT 303	Intermediate Accounting I	
BUSN 329/ INTL 327	Introduction to Intercultural Communication	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 303	Managerial Economics	
ECON 307	Money and Banking	
ECON 312	E-commerce and Markets for Information Goods	
FASH 341	Merchandise Planning and Control	
FASH 342	Retail Buying Simulation	
FASH 343	Fashion Forecasting	
FASH 380	Fashion Branding	
FIRE 305	Principles of Real Estate	
FIRE 309	Risk Management and Insurance	
FIRE 315	Real Property Management	
INFO 361	Systems Analysis and Design	
INFO 364	Database Systems	
INNO 460	Product Innovation: da Vinci Project	
MGMT 319	Leadership	
MGMT 321	Survey of Entrepreneurship	
MGMT 389	Managerial Skills Development	

MGMT 405	Negotiation, Influence and Conflict Management
MGMT/INTL 418	International Management
MGMT/INTL 419	Doing Business in Europe
MGMT 491	Topics in Management
SCMA 302	Business Statistics II
SCMA 303	Business Analytics
SCMA 350	Introduction to Project Management
SCMA 386	Global Supply Chain Management

1

Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
	General education course	3
	General education course	3
	General education course	3
	Open elective	3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
	General education course	3
	Open elective	3
Term Hours:		15

Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

General education course		3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		2
Term Hours:		15
Junior year		
Fall semester		
INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MKTG 302	Marketing and Brand Strategy	3
MKTG 310	Marketing Research	3
Marketing elective		3
Term Hours:		15
Spring semester		
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MKTG 315	Buyer Behavior	3
Marketing electives		6
Term Hours:		15
Senior year		
Fall semester		
BUSN 323	Legal Environment of Business or or Real Estate Law	3
FIRE 325	or Insurance Law	
or FIRE 459		
BUSN 499	Business Knowledge Exam	0
MKTG/INTL 320	International Marketing	3
SCMA 320	Production/Operations Management	3
Marketing elective		3
Open elective		3
Term Hours:		15
Spring semester		
MGMT 434	Strategic Management	3
Marketing electives		6
Open elective		6
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Marketing, Bachelor of Science (B.S.) with a concentration in marketing communication and analytics

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The concentration in

marketing communication and analytics gives students a focus on the importance of traditional media and social media marketing strategies in the marketplace. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

Learning goals

The B.S. in Marketing program:

- Provides students with a broad knowledge of marketing concepts and practices needed in the increasingly diverse domestic and global marketplace
- Prepares students to apply analytical tools to creatively solve marketing problems

Student learning outcomes

Upon completing this program, students will know how to do the following:

1. Identify marketing problems and evaluate alternative solutions
2. Demonstrate research design and analysis skills needed to conduct impactful marketing research
3. Know and apply consumer behavior concepts and the factors that affect consumer decision-making
4. Understand and apply fundamental marketing concepts and strategies in the international marketplace

Special requirements

The admission requirements for the School of Business (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special **academic policies**, including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in **BUSN 499**.

Students may need to take additional mathematics courses as prerequisites to **BUSN 212** or **MATH 200**. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16x Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for **SPCH 121** or **SPCH 321** will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in

either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in marketing communication and analytics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MKTG 302	Marketing and Brand Strategy	3
MKTG 315	Buyer Behavior	3
MKTG 320	International Marketing	3
• Additional major requirements		
MKTG 310	Marketing Research	3
• Concentration requirements		
MKTG 330	Integrated Marketing Communications	3
Select two from:		6
MKTG 335	Introduction to Personal Selling	
MKTG 350	Customer and Marketing Analytics	
MKTG 430	Experiential Marketing	
MKTG 448	Digital Marketing	
• Major electives		
Marketing electives (select from list below)		9
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3

BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
BUSN 323	Legal Environment of Business	3
or FIRE 325	Real Estate Law	
or FIRE 459	Insurance Law	
INFO 360	Business Information Systems	3
or ACCT 307	Accounting Systems	
Open electives		
Select any course. ²		17
Total Hours		120

¹

BUSN 205 satisfies general education AOI for global perspectives.

²

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Marketing electives

Course	Title	Hours
MKTG 325	Business-to-business Marketing	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 350	Customer and Marketing Analytics	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 485	Internship in Selling	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3
MKTG 493	Internship in Marketing	3

Students may select up to six credits from the following (each course should be worth three credits):¹

ACCT 303	Intermediate Accounting I	
BUSN 329/ INTL 327	Introduction to Intercultural Communication	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 303	Managerial Economics	
ECON 307	Money and Banking	
ECON 312	E-commerce and Markets for Information Goods	
FASH 341	Merchandise Planning and Control	

FASH 342	Retail Buying Simulation
FASH 343	Fashion Forecasting
FASH 380	Fashion Branding
FIRE 305	Principles of Real Estate
FIRE 309	Risk Management and Insurance
FIRE 315	Real Property Management
INFO 361	Systems Analysis and Design
INFO 364	Database Systems
INNO 460	Product Innovation: da Vinci Project
MGMT 319	Leadership
MGMT 321	Survey of Entrepreneurship
MGMT 389	Managerial Skills Development
MGMT 405	Negotiation, Influence and Conflict Management
MGMT/INTL 418	International Management
MGMT/INTL 419	Doing Business in Europe
MGMT 491	Topics in Management
SCMA 302	Business Statistics II
SCMA 303	Business Analytics
SCMA 350	Introduction to Project Management
SCMA 386	Global Supply Chain Management

1

Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course		3
General education course		3
General education course		3
Open elective		3
Term Hours:		15
Spring semester		
BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
General education course		3
Term Hours:		15

Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business or Introduction to the World of Business	3
or BUSN 205		
BUSN 323	Legal Environment of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		15
Spring semester		
ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		2
Term Hours:		15

Junior year

Fall semester		
INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MKTG 302	Marketing and Brand Strategy	3
MKTG 310	Marketing Research	3
SCMA 320	Production/Operations Management	3
Term Hours:		15
Spring semester		
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MKTG 315	Buyer Behavior	3
MKTG 330	Integrated Marketing Communications	3
Marketing elective		3
Term Hours:		15

Senior year

Fall semester		
BUSN 499	Business Knowledge Exam	0
MKTG 320	International Marketing	3
MKTG 335	Introduction to Personal Selling or Customer and Marketing Analytics	3
or MKTG 350	or Experiential Marketing	
or MKTG 430	or Digital Marketing	
or MKTG 448		
Marketing elective		3
Open electives		6
Term Hours:		15
Spring semester		
MGMT 434	Strategic Management	3

MKTG 335	Introduction to Personal Selling	3
or	or Customer and Marketing Analytics	
MKTG 350	or Experiential Marketing	
or	or Digital Marketing	
MKTG 430		
or		
MKTG 448		
Marketing elective		3
Open elective		6
Term Hours:		15
Total Hours:		120

Central Authentication Service

The minimum number of credit hours required for this degree is 120.

Marketing, Bachelor of Science (B.S.) with a concentration in personal selling and business marketing

Admission to this program is under permanent suspension pending closure.

Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The concentration in product and brand management gives students a focus on product and service development, as well as branding strategy. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

Learning goals

The B.S. in Marketing program:

- Provides students with a broad knowledge of marketing concepts and practices needed in the increasingly diverse domestic and global marketplace
- Prepares students to apply analytical tools to creatively solve marketing problems

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Identify marketing problems and evaluate alternative solutions
2. Demonstrate research design and analysis skills needed to conduct impactful marketing research
3. Know and apply consumer behavior concepts and the factors that affect consumer decision-making

- 3 4. Understand and apply fundamental marketing concepts and strategies in the international marketplace

Special requirements

The admission requirements for the School of Business detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: **ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112** and

The School of Business has special academic policies, including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in **BUSN 499**.

Students may need to take additional mathematics courses as prerequisites to **BUSN 212** or **MATH 200**. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16x Digital Literacy courses may be applied to the degree. No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for **SPCH 121** or **SPCH 321** will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Please check with your academic adviser before taking the pass/fail grading option.

Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MKTG 302	Marketing and Brand Strategy	3
MKTG 315	Buyer Behavior	3
MKTG 320	International Marketing	3
• Additional major requirements		
MKTG 310	Marketing Research	3
• Concentration requirements		
MKTG 450	Product Development and Management	3
Select two from:		6
INNO 460	Product Innovation: da Vinci Project	
MKTG 330	Integrated Marketing Communications	
MKTG 430	Experiential Marketing	
MKTG 442	Services Marketing	

• Major electives		
Marketing electives (select from list below)		9
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212 or MATH 200	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations) Calculus with Analytic Geometry I	3-4
BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business Real Estate Law Insurance Law	3
INFO 360 or ACCT 307	Business Information Systems Accounting Systems	3
Open electives		
Select any course. ²		17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.**Marketing electives**

Course	Title	Hours
MKTG 325	Business-to-business Marketing	3
MKTG 330	Integrated Marketing Communications	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 350	Customer and Marketing Analytics	3
MKTG 430	Experiential Marketing	3

MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 485	Internship in Selling	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3
MKTG 493	Internship in Marketing	3
Students may select up to six credits from the following (each course should be worth three credits): ¹		
ACCT 303	Intermediate Accounting I	
BUSN 329/ INTL 327	Introduction to Intercultural Communication	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 303	Managerial Economics	
ECON 307	Money and Banking	
ECON 312	E-commerce and Markets for Information Goods	
FASH 341	Merchandise Planning and Control	
FASH 342	Retail Buying Simulation	
FASH 343	Fashion Forecasting	
FASH 380	Fashion Branding	
FIRE 305	Principles of Real Estate	
FIRE 309	Risk Management and Insurance	
FIRE 315	Real Property Management	
INFO 361	Systems Analysis and Design	
INFO 364	Database Systems	
INNO 460	Product Innovation: da Vinci Project	
MGMT 319	Leadership	
MGMT 321	Survey of Entrepreneurship	
MGMT 389	Managerial Skills Development	
MGMT 405	Negotiation, Influence and Conflict Management	
MGMT/INTL 418	International Management	
MGMT/INTL 419	Doing Business in Europe	
MGMT 491	Topics in Management	
SCMA 302	Business Statistics II	
SCMA 303	Business Analytics	
SCMA 350	Introduction to Project Management	
SCMA 386	Global Supply Chain Management	

1

Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	General education course	3
	General education course	3
	General education course	3
	Open elective	3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
	General education course	3
	Open elective	3
Term Hours:		15

Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business	3
	or Introduction to the World of Business	
	BUSN 205	
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
	General education course	3
Term Hours:		15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
	Open elective	2
Term Hours:		15

Junior year

Fall semester		
INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3

MKTG 302	Marketing and Brand Strategy	3
MKTG 310	Marketing Research	3
Marketing elective		3

Term Hours: 15

Spring semester

FIRE 311	Financial Management	3
MGMT 303	Creativity and Ideation	3
MKTG 315	Buyer Behavior	3
MKTG 450	Product Development and Management	3
Marketing elective		3

Term Hours: 15

Senior year**Fall semester**

BUSN 323	Legal Environment of Business	3
	or Real Estate Law	
	FIRE 325 or Insurance Law	
	or FIRE 459	
BUSN 499	Business Knowledge Exam	0
INNO 460	Product Innovation: da Vinci Project	3
	or Integrated Marketing	
	MKTG 330 Communications	
	or Experiential Marketing	
	MKTG 430 or Services Marketing	
	or MKTG 442	
MKTG/INTL 320	International Marketing	3
SCMA 320	Production/Operations Management	3
Open elective		3
Term Hours:		15

Term Hours: 15

Spring semester

INNO 460	Product Innovation: da Vinci Project	3
	or Integrated Marketing	
	MKTG 330 Communications	
	or Experiential Marketing	
	MKTG 430 or Services Marketing	
	or MKTG 442	
MGMT 434	Strategic Management	3
Marketing electives		3
Open elective		6

Term Hours: 15

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Marketing insights, minor in

The minor in marketing insights provides students with the skills necessary for success in marketing, including careers in industry, the nonprofit sector and government organizations. Students gain insights into consumer psychology, global marketing, advertising and promotion, social media and internet marketing, product development, and brand strategy.

The minor in marketing insights is for non-marketing majors and requires a minimum of 18 credits. Students must attain a minimum cumulative GPA of 2.0 in these courses.

Students should take MKTG 301 first, as it is a prerequisite for the other marketing courses.

Course	Title	Hours
MKTG 301	Marketing Principles	3
Choose at least three of the following:		9
MKTG 315	Buyer Behavior	
MKTG 320	International Marketing	
MKTG 330	Integrated Marketing Communications	
MKTG 448	Digital Marketing	
MKTG 450	Product Development and Management	
Choose remaining courses from (or other courses approved by department chair):		6
MKTG 310	Marketing Research	
MKTG 335	Introduction to Personal Selling	
MKTG 340	Retail Management	
MKTG 442	Services Marketing	
Total Hours		18

Sales, minor in

The sales minor requires 18 credits and empowers students from marketing or non-marketing majors to develop the skills necessary for success in personal selling, sales management or any career in which one may need to persuade or influence people, including industry, nonprofits and government organizations. Students gain insights into effectively communicating the value of a product, service or idea; building mutually beneficial professional relationships; creating win-win outcomes; and interacting confidently with others face-to-face. Many executives and organizational leaders started their careers in sales and advanced through effective use of sales skills.

Course	Title	Hours
MKTG 301	Marketing Principles ¹	3
MKTG 335	Introduction to Personal Selling	3
Choose at least two of the following:		6-12
MKTG 315	Buyer Behavior	
MKTG 325	Business-to-business Marketing	
MKTG 435	Selling in the Business Marketplace	
MKTG 485	Internship in Selling	
MGMT 405	Negotiation, Influence and Conflict Management	
Choose remaining credits from the following (or courses approved by department chair):		0-6
FIRE 305	Principles of Real Estate	
FIRE 309	Risk Management and Insurance	
MGMT 389	Managerial Skills Development	
MKTG 320	International Marketing	
MKTG 330	Integrated Marketing Communications	
MKTG 340	Retail Management	
MKTG 442	Services Marketing	
MKTG 450	Product Development and Management	
SCMA 386	Global Supply Chain Management	

SCMA 410 Logistics and Distribution Strategy

Total Hours **18**

1

Students should take MKTG 301 first, as it is a prerequisite for other marketing courses.

Department of Supply Chain Management and Analytics

Jeffery Smith, Ph.D.

Associate professor and chair

business.vcu.edu/academics/supply-chain-management-and-analytics
(<https://business.vcu.edu/academics/supply-chain-management-and-analytics/>)

Faculty in the Department of Supply Chain Management and Analytics are passionate about providing impeccable academic instruction and research that advances knowledge related to production, product development and the information systems needed to direct these endeavors. The department's undergraduate and graduate programs prepare students to immediately take important positions related to supply chain management and business analytics. The department remains involved with the corporate community through a partnership with the Commonwealth Center for Advanced Logistics Systems.

Students interested in production, distribution, and the engineering and finances supporting large-scale operations will be prepared by VCU's programs in supply chain management and analytics to enter an exciting field with plentiful job opportunities. For additional information contact the department by emailing scma@vcu.edu.

- Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics (p. 521)

Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

The concentration in supply chain management and analytics gives students the skills to manage the manufacture and movement of products in the global environment and to understand the fundamentals of decision analytics. The curriculum is comprehensive in that supply chain management and analytics involve a range of issues from inventory management to risk management, as well as the indispensable role of information and technology in coordinating modern supply chains and analyzing data for the benefit of the organization.

Learning goals

Graduates will employ knowledge of supply chain management and effectively utilize analytics tools to provide insight and solutions to complex business issues.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate an understanding of the complexities of global supply chains

2. Demonstrate appropriate strategies to assess and manage uncertainty and risk
3. Identify environmental and social concerns in making supply chain management solutions
4. Employ analytics tools to support decision-making

Special requirements

The admission requirements for the School of Business (p. 472) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPCH 121 or SPCH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either ECON 203 or ECON 205 at VCU may substitute that credit for ECON 210.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
• Concentration requirements		
SCMA 303	Business Analytics	3
SCMA 386	Global Supply Chain Management	3
• Major electives		

SCMA electives (select from list below)		12
Non-SCMA electives (select from list below)		6
Ancillary requirements		
• Ancillary core requirements		
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
BUSN 301	Career and Professional Development	1
BUSN 499	Business Knowledge Exam	0
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MKTG 301	Marketing Principles	3
MGMT 303	Creativity and Ideation	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management	3
SCMA 301	Business Statistics I	3
SCMA 320	Production/Operations Management	3
• Additional ancillary requirements		
BUSN 201 or BUSN 205	Foundations of Business ¹ Introduction to the World of Business	3
BUSN 212	Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)	3-4
or MATH 200	Calculus with Analytic Geometry I	
BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business Real Estate Law Insurance Law	3
Open electives		
Select any course. ²		17
Total Hours		120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Approved electives

Course	Title	Hours
Select four of the following SCMA courses:		
SCMA 339	Quantitative Solutions for Supply Chain Management	3
SCMA 410	Logistics and Distribution Strategy	3
SCMA 420	Strategic Sourcing	3
SCMA 430	Data Management and Visualization	3

SCMA 439	Process Management and Quality Control	3
SCMA 440	Data Mining and Forecasting	3
SCMA 491	Topics in Supply Chain Management and Analytics	1-3
SCMA 492	Independent Study in Supply Chain Management and Analytics	1-3
SCMA 493	Internship in Supply Chain Management and Analytics	3
Select two of the following non-SCMA courses:		
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (If this option is chosen, both must be taken.)	6
ECON 303	Managerial Economics	3
INFO 361	Systems Analysis and Design	3
MGMT 389	Managerial Skills Development	3
MKTG 325	Business-to-business Marketing	3
MKTG 450	Product Development and Management	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BUSN 171	Mathematical Applications for Business (prerequisite for BUSN 212; counts as open elective)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
General education course		3
General education course		3
Term Hours:		15

Spring semester

BUSN 212	Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)	3
BUSN 225	Winning Presentations	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Open elective		3
Term Hours:		15

Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3

BUSN 201 or BUSN 205	Foundations of Business or Introduction to the World of Business	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3

Term Hours: 15

Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 301	Career and Professional Development	1
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		3

Term Hours: 16

Junior year

Fall semester

BUSN 323 or FIRE 325 or FIRE 459	Legal Environment of Business or Real Estate Law or Insurance Law	3
BUSN 325	Organizational Communication	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3

Term Hours: 15

Spring semester

INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 319	Leadership	3
SCMA 303	Business Analytics	3
SCMA 386	Global Supply Chain Management	3

Term Hours: 15

Senior year

Fall semester

FIRE 311	Financial Management	3
SCMA electives		6
Non-SCMA elective		3
Open elective		3

Term Hours: 15

Spring semester

BUSN 499	Business Knowledge Exam	0
MGMT 434	Strategic Management	3
SCMA electives		6
Non-SCMA elective		3
Open elective		2

Term Hours: 14

Total Hours: 120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.D.A.

The accelerated B.S. and M.D.A. program allows qualified students to earn both the B.S. in Business with a concentration in supply chain management and analytics and Master of Decision Analytics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 credit hours of graduate courses toward both the B.S. and M.D.A. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

This accelerated program is for highly-motivated students who want to pursue advanced study in decision analytics. Students holding these degrees will be prepared to contribute to analytical decision making that supports the mission of a variety of organizations.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including SCMA 212 or MATH 200, SCMA 301, and SCMA 302 with a minimum grade of B and an overall GPA of 3.25. Students who received transfer credit for these courses shall submit transcripts from previous institutions with their application so that performance in these classes can be evaluated. Successful applicants would enter the program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for spring semester admission and no later than July 1 for fall semester admission.

Three reference letters (at least one from a School of Business faculty member) must accompany the application. Additionally, the application must include a personal statement that provides details concerning the student's interest in decision analytics and an explanation of how the accelerated program will help them achieve their career goals. Students who are interested in the accelerated program should consult with the faculty adviser to the master's program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Business degree with a concentration in supply chain management and analytics will be awarded upon

completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for the required major or open elective credits for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate decision analytics courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
SCMA 632	Statistical Analysis and Modeling	3
SCMA 645	Advanced Decision Analytics	3
SCMA 648	Business Data Analytics	3
SCMA 669	Developing and Implementing Forecasting Methods for Business	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BUSN 323	Legal Environment of Business	3
or FIRE 325	Real Estate Law	
or FIRE 459	Insurance Law	
BUSN 325	Organizational Communication	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3
Term Hours:		15
Spring semester		
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 319	Leadership	3
SCMA 303	Business Analytics	3
SCMA 386	Global Supply Chain Management	3
Term Hours:		15
Senior year		
Fall semester		
FIRE 311	Financial Management	3
SCMA 632	Statistical Analysis and Modeling	3
SCMA 648	Business Data Analytics	3
SCMA elective		3
Open elective		3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
MGMT 434	Strategic Management	3
SCMA 645	Advanced Decision Analytics	3

SCMA 669	Developing and Implementing Forecasting Methods for Business	3
SCMA elective		3
Open elective		3
Term Hours:		15
Fifth year		
Fall semester		
INFO 364	Database Systems ¹	3
ECON 501	Introduction to Econometrics	3
Graduate program electives		6
Term Hours:		12
Spring semester		
INFO 610	Analysis and Design of Database Systems	3
Graduate program electives		6
Term Hours:		9

1

INFO 364 is a prerequisite for INFO 610, a requirement for the Master of Decision Analytics. It is not a requirement for the B.S. in Business with a concentration in supply chain management and analytics, therefore it is recommended that INFO 364 be completed in Year 5, just prior to INFO 610.

Accelerated B.S. and M.S.C.M.

The accelerated B.S. and M.S.C.M. program allows qualified students to earn both the B.S. in Business with a concentration in supply chain management and analytics and Master of Supply Chain Management in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S.C.M. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are prepared for corporate and government supply chain management positions using data analytics, leadership skills and global perspectives.

Admission to the program

Minimum qualifications for admittance to the program include completion of 85 undergraduate credit hours including SCMA 212 or MATH 200, SCMA 301, and SCMA 302 with a minimum grade of B and an overall GPA of 3.25. Successful applicants would enter the program in the fall semester of their senior year. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration.

Undergraduate students must have departmental approval to participate in an accelerated program. Students may be admitted after completing all courses listed as recommended for the junior year in the course sequence below; applications must be received no later than Nov. 1 for spring semester admission and no later than July 1 for fall semester admission.

Three reference letters (at least one from a supply chain management and analytics department faculty member) must accompany the application. Students who are interested in the accelerated program

should consult with the faculty adviser to the master's program before they have completed 85 credits.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Business degree with a concentration in supply chain management and analytics will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for the required major or open electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate courses for the M.S.C.M. that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
SCMA 602	Global Supply Chain Management	3
SCMA 675	Operations Management	3
MSCM program electives		6

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BUSN 323	Legal Environment of Business	3
or FIRE 325	Real Estate Law	
or FIRE 459	Insurance Law	
BUSN 325	Organizational Communication	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3
Term Hours:		15
Spring semester		
INFO 360	Business Information Systems	3
MGMT 303	Creativity and Ideation	3
MGMT 319	Leadership	3
SCMA 303	Business Analytics	3
SCMA 386	Global Supply Chain Management	3
Term Hours:		15
Senior year		
Fall semester		
FIRE 311	Financial Management	3
SCMA 675	Operations Management	3

SCMA electives		6
MSCM program elective		3
Term Hours:		15
Spring semester		
BUSN 499	Business Knowledge Exam	0
MGMT 434	Strategic Management	3
SCMA 602	Global Supply Chain Management	3
SCMA elective		3
MSCM program elective		3
Open elective		2
Term Hours:		14
Summer semester		
SCMA 603	SAP ERP and Supply Chain Management	3
SCMA 606	Supply Chain Innovation	3
Term Hours:		6
Fifth year		
Fall semester		
SCMA 645	Advanced Decision Analytics	3
SCMA 697	Guided Study in Supply Chain Management	3
MSCM program electives		6
Term Hours:		12

SCHOOL OF DENTISTRY

The School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the MCV School of Dentistry.

In 1968, by an act of the Virginia General Assembly, MCV was merged with Richmond Professional Institute to form Virginia Commonwealth University. The School of Dentistry is located on VCU's MCV Campus.

The facilities of the School of Dentistry are housed in the Wood Memorial, Lyons and Perkinson buildings and contain clinical facilities, research facilities, classrooms, student laboratories, departmental offices and a computer-learning laboratory.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favorable conditions and in accordance with the standards established by the Commission on Dental Accreditation of the American Dental Association.

The degree of Doctor of Dental Surgery (D.D.S.) is awarded to graduates of the school's professional program and the Bachelor of Science degree to graduates of the Dental Hygiene Program within the Department of Oral Health Promotion and Community Outreach.

Graduates of the advanced dental education programs in endodontics, orthodontics, pediatric dentistry and periodontics are awarded the Master of Science in Dentistry degree.

Administration

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dentistry.vcu.edu (<http://www.dentistry.vcu.edu>)

Clara Spatafore, D.D.S., M.S.

Interim dean

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Senior associate dean, Clinical Education

B. Ellen Byrne, D.D.S., Ph.D.

Senior associate dean, Academic Affairs

Michael Healy, D.D.S., M.Ed.

Senior associate dean, Student Services

Kim T. Isringhausen, M.P.H.

Associate dean, Risk, Compliance and Human Resources

Iain M. Morgan, Ph.D.

Associate dean, Research

Mary T. Pettiette, D.D.S.

Associate dean, Admissions

Accreditation

Dental hygiene (bachelor's degree)

Commission on Dental Accreditation

Dentistry (D.D.S.)

Commission on Dental Accreditation

Advanced Dental Education Programs*

Commission on Dental Accreditation

*(includes endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics and Advanced Education in General Dentistry)

Mission

The mission of the VCU School of Dentistry:

- **Education** of highly qualified dental professionals
- **Research** that advances the understanding of oral health, disease and effective treatment
- **Service** to the community
- Improved oral and general **health** of our patients and the general population

Dental Hygiene Program

VCU School of Dentistry
520 North 12th Street, Suite 409
Richmond, Virginia 23298-0566
(804) 828-9096
Fax: (804) 827-0969

Tammy Swecker

Interim director, Dental Hygiene Program
Chair, dental hygiene admissions committee

The Dental Hygiene Program, established in 1969, offers courses leading to a Bachelor of Science in Dental Hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene science and theory, community health, and pre-clinic and clinical experiences. The Dental Hygiene Program is accredited by the Commission on Dental Accreditation of the American Dental Association. Upon successful completion of the program, graduates are eligible for national, regional and state board licensing examinations.

Curriculum notes

- As part of students' course of study and community education, travel to off-campus sites is expected. Students will be required to provide their own transportation to agencies used for clinical and community health rotation experiences.
- Licensing/certification: It is important for every student to understand that, while certain curricula are designed for the purpose of achieving registration or certification by an outside agency, completion of such an academic program in no way assures the student of successful registration or certification. No employee, agent or representative of this university is authorized or empowered to provide such assurances either directly or by implication.

- Individuals who have a felony or misdemeanor conviction may not be eligible for licensure in Virginia. The Virginia Board of Dentistry makes this decision. For questions regarding this issue, call the Virginia Board of Dentistry at (804) 662-9906.
- Criminal background checks are required prior to matriculation (<http://www.dentistry.vcu.edu/programs/dentalhygiene/background/>).

Policy on blood-borne and infectious diseases

By the nature of the profession, oral health care providers are routinely exposed to blood and body fluids during the treatment of patients in a clinical environment. In accordance with Section 32.1-45.1 of the Code of Virginia, the School of Dentistry requires that if a health care provider is exposed to body fluids in a manner that may transmit blood-borne or infectious disease, both the health care provider and the patient will be tested for disease.

Mission, philosophy and program goals

Mission

The Dental Hygiene Program at VCU is committed to excellence in education by considering each student's individual abilities as future clinicians and by providing an environment where students can thrive and be inspired every day. The program will prepare a diverse student body to become future practitioners who deliver health care services and oral health education in an interdisciplinary, culturally sensitive manner. The program will offer exceptional educational opportunities empowering students to become competent clinicians and lifelong learners devoted to scientific inquiry and service to the local, national and global community.

Goals

The following program goals reflect the mission of VCU, VCU School of Dentistry and the Dental Hygiene Program competencies:

Education

- Prepare dental hygiene graduates who possess the knowledge, skills and attributes to provide quality dental hygiene care
- Provide students with an interdisciplinary, evidence-based curriculum, reflective of contemporary health care delivery
- Educate a diverse population of learners in a patient-centered, student-friendly atmosphere that fosters active and self-directed learning, critical thinking and self-assessment

Patient care

- Prepare dental hygiene graduates who are competent to provide patient-centered, comprehensive, evidence-based dental hygiene care in an ethical and professional manner
- Provide a clinical education based on a model of prevention designed to promote optimal oral and systemic health

Service

- Prepare dental hygiene graduates to respond to the evolving oral health care needs of a culturally diverse society by demonstrating a commitment to civic engagement
- Provide students with opportunities for service-learning activities in the community that promote the mission of the school, university and profession

Professionalism

- Provide students with the skills to advance the foundation and practice of dental hygiene through a commitment to scientific inquiry and lifelong learning
- Prepare dental hygiene graduates to assume leadership roles in professional organizations
- Model professional behaviors consistent with ethical and legal expectations of the dental hygiene profession

Admission requirements

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic course credits are required. For more information on the following prerequisites, please visit the Dental Hygiene Program website (<http://www.dentistry.vcu.edu/programs/dentalhygiene/admission/>).

Course	Title	Hours
Prerequisite courses		
English		6
General biology with laboratory		3-5
College chemistry with laboratory		3-5
Anatomy and physiology with laboratory		5-8
Microbiology with laboratory		3-5
Humanities		3
Introductory sociology		3
Introductory psychology		3
Speech		3
Statistics		3
Visual or performing arts		3

The remainder of the 60 required credits can be chosen from any of the following areas of study: science, math, computer usage, first aid and CPR, and humanities. Science electives are strongly recommended.

For a list of prerequisite courses that can be taken in the Virginia Community College System or through Richard Bland College, refer to the VCU Transfer Center website (<https://transfer.vcu.edu/prospective/pathways/>).

Additional prerequisites are as follows:

- **GPA** – A minimum GPA of 2.5 based on a 4.0 scale in the cumulative courses and a minimum GPA of 2.7 in the math/science and designated prerequisite courses are required.
- **English proficiency** – To successfully complete the dental hygiene curriculum, students are required to communicate clearly (in English) with faculty, students, staff and patients. To assure such competence, the Dental Hygiene Program requires any applicant whose native language is not English and who has been educated primarily outside of the United States to submit official Test of English as a Foreign Language or International English Language Testing System scores. Applicants are required to submit an official score with the application packet. The test must have been taken within the past two years. The Dental Hygiene Program does not conditionally admit applicants who have not met the requirement for proof of English proficiency.

Applicants may be exempt from this requirement if:

- They have successfully completed 26 or more transferable semester credits at a two- or four-year postsecondary institution in the United States and have completed the full freshman

English (non-ESL) requirement at that school with a minimum grade of C

or

- They have successfully completed 60 or more transferable semester credits at a two- or four-year postsecondary institution in the United States

No student will be considered for admission until proof of English proficiency is determined.

TOEFL: VCU's Dental Hygiene Program minimum TOEFL score requirements is 550 (paper), 213 (computer) or 79-80 (internet-based). For more information about TOEFL testing, go to: www.ets.org (<http://www.ets.org/>)

IELTS: VCU's Dental Hygiene Program minimum IELTS score requirement is 6.0.

- **Deadline** – Complete the online application through the American Dental Education Association Dental Hygiene Centralized Application Service. All application materials must be received by the ADEA DHCAS by **Feb. 1**.

Any application that does not meet the above stipulations will not be processed.

For additional information on prerequisites or the application or admissions process, please visit the program's website for prospective students (<http://www.dentistry.vcu.edu/programs/dentalhygiene/>).

Academic progress committee guidelines

The faculty of the VCU School of Dentistry has the responsibility for evaluating the student's academic progress. It is incumbent on the course directors or their designees to specify, at the time a course first convenes, the criteria to be used in student assessment and the standards by which the students will be judged.

Guidelines that govern the actions of the academic progress committee and the academic activities of the students are distributed to all students at the beginning of their studies. The guidelines are available upon request from the Office of Academics in the School of Dentistry.

Financial assistance

A brief description of financial aid based on demonstrated need is contained in the Financial aid (p. 53) section of this bulletin. Scholarships and loans are available from various sources. Information on financial assistance is also available upon request from the Office of Financial Affairs, School of Dentistry, Virginia Commonwealth University, Box 980566, Richmond, VA 23298-0566.

Criminal background checks

As an applicant to the Dental Hygiene Program at Virginia Commonwealth University School of Dentistry, all accepted candidates, prior to matriculation, will be required to submit to a criminal background check. A final decision about matriculation will be made after a review of the applicant's CBC.

The rationale for performing CBCs:

- To foster patient safety and well-being
- To bolster the continuing trust of the public in the dental hygiene profession

- To ascertain the ability of accepted applicants and enrolled dental hygiene students to eventually become licensed as dental hygienists
- To minimize the liability of dental schools and their affiliated clinical facilities

The CBC will not be a component of the application, interview or selection process but will be a mandatory component of the prematriculation process. The final decision regarding matriculation of an applicant will be based on the self-reported information in the candidate's application and information in the CBC report. Factors involved in the final decision may include, but are not limited to:

- The nature, circumstances and frequency of any reported offense(s)
- Length of time since the offense(s)
- Available information that addresses efforts at rehabilitation
- The accuracy of the information provided by the applicant

The information obtained through a CBC will not become part of a student's academic file and will remain confidential unless the findings result in an institutional action by the School of Dentistry.

Only candidates offered class positions and alternate-list candidates will be asked to provide a CBC prior to matriculation.

Candidates will be responsible for the cost of the CBC.

Preparatory study for dental hygiene

University Academic Advising provides programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in dental hygiene (p. 61), see the UAA section of this bulletin.

- Dental Hygiene, Bachelor of Science (p. 529)

Dental Hygiene, Bachelor of Science (B.S.)

The Bachelor of Science in Dental Hygiene requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene science and theory, community health and pre-clinical and clinical experiences. Upon successful completion of the program, graduates are eligible for national, regional and state board licensing examinations. Classes enter once each year in the fall semester.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate commitment to the legal and ethical practice of dental hygiene, demonstrating integrity, honesty and confidentiality with colleagues, patients and the community
- Demonstrate competence in interpersonal and communication skills and in the evaluation, synthesis and application of information and technology as resources in contemporary dental hygiene practice
- Systematically collect, accurately record and analyze data on the general, oral and psychosocial health status of a variety of patients using methods consistent with medico-ethico-legal principles
- Use critical-thinking and decision-making skills to reach conclusions about the patient's dental hygiene treatment needs based on an

analysis of all available assessment data and evidence from current scientific literature

- Collaborate with the patient, guardian and/or other health care professionals to formulate an individualized comprehensive dental hygiene care plan based on assessment findings and the dental hygiene diagnosis
- Provide and implement specialized care that includes educational, preventive and therapeutic services designed to minimize risk and optimize oral health as well as assist the patient in achieving and maintaining oral health goals
- Evaluate the outcomes of dental hygiene care, which occur throughout the process of care, and modify as necessary
- Initiate and assume responsibility for health promotion and disease prevention activities for diverse populations in a variety of settings

Special requirements

Admission requirements include two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic course credits. By completing these 60 semester hours, students will complete the general education requirements of the degree. More information concerning the admission requirements for VCU students is located in the undergraduate study section of this Bulletin that describes the pre-health major in dental hygiene (p. 61).

- **GPA** – A minimum GPA of 2.5 based on a 4.0 scale in the cumulative courses and a minimum GPA of 2.7 in math/sciences is required.
- **English proficiency** – To successfully complete the dental hygiene curriculum, students are required to communicate clearly (in English) with faculty, students, staff and patients. To assure such competence, the Dental Hygiene Program requires any applicant whose native language is not English and who has been educated primarily outside of the United States to submit official Test of English as a Foreign Language or International English Language Testing System scores. Applicants are required to submit an official score with the application packet. The test must have been taken within the past two years. The Dental Hygiene Program does not conditionally admit applicants who have not met the requirement for proof of English proficiency.

You may be exempt from this requirement if:

- You have successfully completed 26 or more transferable semester credits at a two- or four-year postsecondary institution in the U.S. and have completed the full freshman English (non-ESL) requirement at that school with a minimum grade of C.
- or**
- You have successfully completed 60 or more transferable semester credits at a two- or four-year postsecondary institution in the U.S.

No student will be considered for admission until proof of English proficiency is determined.

TOEFL: VCU's Dental Hygiene Program minimum TOEFL score requirements are 550 (paper), 213 (computer) or 80 (internet-based). For more information about TOEFL testing, go to www.ets.org (<http://www.ets.org>).

IELTS: VCU's Dental Hygiene Program minimum IELTS score requirement is 6.0.

Degree requirements for Dental Hygiene, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
DENH 301	Dental Hygiene Theory I	5
DENH 302	Dental Hygiene Theory II	2
DENH 307	Research Methods and Study Designs	2
DENH 312	Community Oral Health Promotion	2
DENH 327	Clinical Dental Hygiene I	4
DENH 337	Clinical Service Learning	2
DENH 342	Nutrition	3
DENH 401	Dental Hygiene Theory III	2
DENH 402	Dental Hygiene Theory IV	2
DENH 411	Introduction to Public Health	2
DENH 412	Community Dental Health	2
DENH 422	Current Issues, the Law and Ethics	2
DENH 437	Clinical Dental Hygiene II	5
DENH 447	Clinical Dental Hygiene III	5
DENH 457	Clinical Service-learning ^{taken two times for 1 CH each}	2
DHBS 301	Head and Neck Anatomy for Dental Hygienists	3
DHBS 302	Microscopic Anatomy	2
DHBS 365	Infection and Immunity	2
DHBS 441	Pharmacology and Pain Control for Dental Hygiene	4
GENP 302	Dental Materials	2
GENP 311	Oral Anatomy and Occlusion	3
IPEC 501	Foundations of Interprofessional Practice	1
ORPT 301	Dental Radiology	1
ORPT 324	Oral Pathology	3
ORSG 431	Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office	2
PERI 326	Periodontics I	1
PERI 329	Periodontics II	2
Ancillary requirements		
Additional subjects and credits required for admission ¹		39
English (6-9 credits)		
General biology with laboratory (3-5 credits)		
College chemistry with laboratory (3-5 credits)		
Anatomy with laboratory (3-5 credits)		
Physiology with laboratory (3-5 credits)		
Microbiology with laboratory (3-5 credits)		
Humanities (3 credits)		
Introductory sociology (3 credits)		
Introductory psychology (3 credits)		

Speech (3 credits)	
Statistics (3 credits)	
Visual or performing arts (3 credits)	
Electives	
Total Hours	128

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 60 credits.

The minimum number of credit hours required for this degree is 128.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Credits required for admission to program: 60

Freshman year

Fall semester	Hours
Courses taken toward admission to program	15
Term Hours:	15

Spring semester

Courses taken toward admission to program	15
Term Hours:	15

Sophomore year

Fall semester

Courses taken toward admission to program	15
Term Hours:	15

Spring semester

Courses taken toward admission to program	15
Term Hours:	15

Junior year

Fall semester

DENH 301	Dental Hygiene Theory I	5
DHBS 301	Head and Neck Anatomy for Dental Hygienists	3
DHBS 302	Microscopic Anatomy	2
DHBS 365	Infection and Immunity	2
GENP 311	Oral Anatomy and Occlusion	3
IPEC 501	Foundations of Interprofessional Practice	1
ORPT 301	Dental Radiology	1
PERI 326	Periodontics I	1
Term Hours:		18

Spring semester

DENH 302	Dental Hygiene Theory II	2
DENH 307	Research Methods and Study Designs	2
DENH 327	Clinical Dental Hygiene I	4
DENH 342	Nutrition	3
ORPT 324	Oral Pathology	3
PERI 329	Periodontics II	2
Term Hours:		16

Summer semester

DENH 312	Community Oral Health Promotion	2
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DENH 337	Clinical Service Learning	2
GENP 302	Dental Materials	2
Term Hours:		6

Senior year

Fall semester

DENH 401	Dental Hygiene Theory III	2
DENH 411	Introduction to Public Health	2
DENH 437	Clinical Dental Hygiene II (capstone)	5
DENH 457	Clinical Service-learning	1
DHBS 441	Pharmacology and Pain Control for Dental Hygiene	4
ORSG 431	Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office	2
Term Hours:		16

Spring semester

DENH 402	Dental Hygiene Theory IV	2
DENH 412	Community Dental Health	2
DENH 422	Current Issues, the Law and Ethics	2
DENH 447	Clinical Dental Hygiene III (capstone)	5
DENH 457	Clinical Service-learning	1
Term Hours:		12

Total Hours: 128

The minimum number of credit hours required for this degree is 128.

SCHOOL OF EDUCATION

The Virginia Commonwealth University School of Education prepares effective, highly skilled teachers, counselors, school administrators, higher education faculty and other education professionals committed to making a difference in the lives of children and adults and their communities, particularly in urban and high-need environments.

Located on the university's Monroe Park Campus, the School of Education has a strong commitment to social justice, diversity and inclusion among students, faculty and staff, as well as in its academic programs.

The School of Education offers six bachelor's programs, one undergraduate certificate, three undergraduate minors, seven master's programs, three doctoral programs, four post-baccalaureate certificates, one graduate certificate and two post-master's certificates.

The guiding theme of educator preparation programs in the School of Education is **educator as critically reflective practitioner**. Courses and experiences provide opportunities for individuals to be engaged in meaningful dialog about the nature and application of appropriate knowledge and skills to make instructional, assessment, counseling and leadership decisions that improve student learning.

The school has more than 130 teaching and research faculty, many of whom are internationally renowned experts who produce and disseminate scholarship that extends knowledge, improves practice and collaboration, and supports schools and educational and human service agencies.

Administration

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Professor and dean

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Professor and senior associate dean for research and faculty development

Luciana C. de Oliveira, Ph.D.
Professor and associate dean for academic affairs

Tomika L. Ferguson, Ph.D.
Assistant professor and assistant dean for student affairs and inclusive excellence

Accreditation

Virginia Commonwealth University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, master's and doctoral degrees.

Education (all degrees)

In addition to institutional accreditation, initial and advanced licensure programs maintain professional accreditation and/or approval. Initial

and advanced licensure degree programs are accredited by the National Council for Accreditation of Teacher Education and approved by the Virginia State Board of Education.

The educator preparation program is currently undergoing the process of obtaining accreditation through the Council for Accreditation of Educator Preparation.

Counselor education

Accredited by the Council on Accreditation of Counseling and Related Educational Programs

This accreditation applies to both the K-12 school counseling concentration and the college counseling and student affairs concentration.

Organization

The chief administrative office for the School of Education is Oliver Hall, Room 2090. The dean is responsible for the overall operation of the school, while two associate deans and one assistant dean (associate dean for academic affairs, associate dean for research and faculty development, and assistant dean for student affairs and inclusive excellence) assist in the school's administrative functions.

The school contains four academic departments: Counseling and Special Education, Educational Leadership, Foundations of Education, and Teaching and Learning. The school also supports a number of centers and institutes, including:

- Center for Innovation in STEM Education
- Center for Teacher Leadership
- Child Development Center
- International Educational Studies Center
- Metropolitan Educational Research Consortium
- Minority Educator Recruitment, Retention and Equity Center
- Partnership for People with Disabilities
- Rehabilitation Research and Training Center
- The Literacy Institute at VCU

Facilities

The School of Education is housed primarily in Oliver Hall, where classroom, laboratory and activity centers, as well as faculty and administrative offices can be found. Clinical laboratories are located at 3600 W. Broad St. The affiliated centers have various locations close to the Monroe Park Campus.

Admission to undergraduate teaching programs

Admission to a B.S. in Education program will be dictated by the admissions policies of VCU (<https://www.vcu.edu/admissions/apply/>). Applicants for undergraduate degree programs should be graduates of an accredited high school, anticipating graduation from an accredited high school or hold the GED Certificate.

The level and type of high school courses and consistency and trends of grades are also considered. Other factors such as co- or extracurricular activities, community service, personal statement/essay, recommendations, special talents and leadership are also considered.

Primary emphasis, however, is placed on academic credentials. Although SAT or ACT scores are not required for admission to the B.S. in Education programs, satisfactory scores on these assessments are required for **teacher preparation** (see information below).

Transfer applicants are considered for admission provided they present evidence of good standing at the last institution attended. See the admissions website for specific requirements (<https://www.vcu.edu/admissions/apply/transfer/>). Transfer candidates must meet the specific guidelines listed in the freshman undergraduate admission guidelines (p. 32). Transfer students and students currently attending VCU who wish to change their majors to this program must have a minimum GPA of 2.5; however, note the requirements of a GPA of 2.8 and required SAT or ACT scores for admission to teacher preparation and then to student teaching outlined below.

For additional information, see the School of Education's website (<https://soe.vcu.edu/academics/undergraduate-programs/>).

Special requirements

Admission to teacher preparation

Because the B.S. in Education programs lead to initial professional licensure, students must both declare an area of study and be formally accepted into teacher preparation. During the first semester at VCU, first-year students will be eligible to take lower-level course work that will focus primarily on general education/liberal arts, professional studies and courses specific to the initial licensure area. Transfer students will work closely with their assigned undergraduate adviser to determine their plan of study and timing to teacher preparation, taking into consideration eligible transfer course work.

After successfully completing a minimum of 50 credits, students are eligible to apply for formal admission into teacher preparation, specifying in which initial licensure area they wish to be endorsed. Students eligible to apply for admission to teacher preparation are required to schedule an appointment with their assigned adviser to review the application requirements to ensure success. In order to complete the application for teacher preparation, students must show a minimum cumulative institutional or transfer GPA of 2.8. Information on admission to the teacher education program (<https://soe.vcu.edu/admission/teacher-preparation-application/>) can be found on the Student Services Center website.

Requirements for admission to teacher preparation:

- Submission of completed Application to Teacher Preparation form
- Minimum of 2.8 cumulative GPA (institutional GPA or transfer GPA)
- Successful completion of EDUS 202 and EDUS 301 (seven credits)
- Benchmark scores on required SAT or ACT
- Passing scores on required Virginia Communication and Literacy Assessment
- Successful completion of a background/criminal history self-report (with no record of a felony conviction)
- Completion of the Dispositions Self Rating Survey
- Adviser or department chair recommendation

Application to clinical internship (student teaching)

All students are required to complete a full semester of clinical internship. Students must complete and submit an application to the clinical internship by the beginning of their junior year in order to be eligible. If students do not complete their applications on time and with hard copies

of passing score reports, they will not be guaranteed acceptance into a clinical internship.

Requirements for clinical internship:

- Formal admission into teacher preparation (see above)
- Submission of completed departmental application for a clinical internship by the established deadline
- Successful completion of all other required course work
- Minimum of 3.0 GPA qualitative and no grade lower than a C in education courses
- Passing scores on the SAT or ACT
- Passing scores on the Virginia Communication and Literacy Assessment
- Passing scores on the Praxis II: Subject Assessment
- Passing scores on the Reading for Virginia Educators (elementary and special education only)
- Completion of the online Child Abuse Prevention training and certification of successful completion
- Submission of a tuberculosis screening (must be dated no more than a year from the expected date of completion of a clinical internship)
- Completion of Dyslexia and Learning module and certification of successful completion
- Virginia State and Local Civic Education Module (elementary and secondary history and social sciences)
- Criminal background check without a felony conviction
- Descriptive statement on experiences related to children or teaching
- Successful faculty practicum review

Extended Teacher Preparation Program

The School of Education, in cooperation with the College of Humanities and Sciences, offers extended teacher preparation programs in secondary education (grade six through grade 12) and early childhood and elementary education (prekindergarten through grade six). The successful completion of these programs results in the simultaneous awarding of both a bachelor's and a master's degree.

The Extended Teacher Preparation program is intended only for undergraduate students who are seeking to apply to the Master of Teaching program.

Further details of the Extended Teacher Preparation program (<http://bulletin.vcu.edu/graduate/school-education/extended-teacher-preparation-program/>) can be found in the Graduate Bulletin. Students interested in the program should speak with their adviser for more information.

For the traditional, four-year pathway in early childhood education, elementary education, health and physical education, engineering education, and special education students should review undergraduate admissions information (p. 532) for the Bachelor of Science in Education program. For more information on undergraduate programs, visit the School of Education website (<https://soe.vcu.edu/academics/undergraduate-programs/>).

Department of Counseling and Special Education

Donna M. Gibson, Ph.D.

Professor and chair

The Department of Counseling and Special Education blends top-tier, accredited programs in counselor education and special education and disability policy to create a unique, interdisciplinary academic environment for students and faculty. The department's primary mission is to prepare graduates to be leaders, ready to make a difference in people's lives. Courses emphasize applicable learning, incorporating the practical tasks and situations students will be faced with on the job.

The nationally recognized faculty members provide guidance and support, allowing students to fully explore their areas of interest. The department provides the tools that help students examine, refine and challenge current methods and scholarship and to use evidence-based research. Learn more by visiting the Department of Counseling and Special Education webpage (<http://www.soe.vcu.edu/departmentpages/counseling-and-special-education/>).

- Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.) (p. 534)
- Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in early childhood (p. 536)
- Disability Studies, Certificate in (Undergraduate certificate) (p. 538)
- Early intervention and early childhood special education, minor in (p. 539)
- Special education, minor in (p. 539)

Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

The purpose of the B.S.Ed. in Special Education and Teaching degree is to prepare students to serve as initially licensed special education teachers in K-12 schools, as well as to serve as educators and leaders in schools and community-based settings. The program will focus on providing students with the tools they need to make a difference in the lives of children, youth and adults with disabilities. Students will garner the knowledge and skills to become licensed special education teachers who work with children with high incidence disabilities, including individuals with learning disabilities, emotional disturbance and mild to moderate intellectual disability. Students will be able to recognize a child's educational and social problems, to formulate effective and personalized/individualized instruction, and to consult with parents, teachers and administrators to incorporate accommodations and transitions across the child's educational program. Students also will be prepared to teach reading and language, mathematics, and other core content areas, as well as be able to apply classroom and behavior management and social skills to students with diverse abilities and backgrounds. Graduates will be prepared to work in public and private elementary, middle and high schools across Virginia, with particular focus in urban and high-need areas. Graduates will be capable of working with diverse learners and adapting instructional programs based on the needs of their students and clients. Successful completion of the program will result in licensure in special education/general education curriculum (K-12).

See Admission to undergraduate programs (p. 532) for admission requirements to this program.

Student learning outcomes

1. **Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and

acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.

2. **Content:** Students will demonstrate knowledge of the subjects they will teach.
3. **Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
4. **Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to Teacher Preparation and a 3.0 GPA to be admitted to Clinical Internship.

Degree requirements for Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
SEDP 200	Characteristics of Individuals With Disabilities	3
SEDP 201	Teaching Individuals With Mild and Moderate Disabilities	3
SEDP 203	Special Education Law	3
SEDP 216	Families and Professional Partnerships	3
SEDP 282	Multicultural Perspectives in Education	3
SEDP 330	Survey of Special Education	3
SEDP 402	Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology	3
SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
SEDP 415	Action Research in Education and Special Education: Capstone Project	3
SEDP 420	Special Education Leadership for Inclusive Schools	3
SEDP 495	Universal Design for Learning and Transition	3
• Additional major requirements		
CLED 405	A Survey of Career Counseling	3

SEDP 311	Secondary Education and Transition Planning	3
SEDP 315	Classroom Management and Behavior Support for Students With Disabilities	3
SEDP 320	Development and Implementation of Positive Behavior Support Plans	3
SEDP 378	Teaching Math to Students With Disabilities	3
SEDP 379	Assessment Practices in Autism and Developmental Disabilities	3
SEDP 380	Teaching Reading to Students With Disabilities	3
SEDP 389	IEP and Due Process in Special Education	3
SEDP 401	Assessment in Diverse Settings	3
SEDP 404	Methods in Teaching Science and Social Studies for Students With Disabilities	3
SEDP 460	Specialized Reading and Writing Interventions for Students With Disabilities	3
SEDP 461	Specialized Math Interventions for Students With High Incidence Disabilities	3
TEDU 410	Building a Community of Learners: Classroom Management	3
TEDU 510	Instructional Technology in PK-12 Environments	2
• Field-based learning and student teaching requirements		
SEDP 250	Special Education Elementary Supervision	2
SEDP 350	Special Education Middle School Supervision	2
SEDP 450	Special Education High School Supervision	2
SEDP 499	Student Teaching	6
Total Hours		123

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
SEDP 200	Characteristics of Individuals With Disabilities	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry I	
General education course (select quantitative foundations)		3
General education course		3

General education course		3
Term Hours:		15

Spring semester

EDUS 202	Diversity, Democracy and Ethics	4
SEDP 201	Teaching Individuals With Mild and Moderate Disabilities	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course	video for Focused Inquiry II	
General education course		3
General education course		3
Term Hours:		16

Sophomore year

Fall semester

CLED 405	A Survey of Career Counseling	3
SEDP 203	Special Education Law	3
SEDP 282	Multicultural Perspectives in Education	3
SEDP 330	Survey of Special Education	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Term Hours:		18

Spring semester

2.8 GPA required for admission to teacher preparation		
EDUS 301	Human Development and Learning	3
SEDP 216	Families and Professional Partnerships	3
SEDP 250	Special Education Elementary Supervision	2
SEDP 315	Classroom Management and Behavior Support for Students With Disabilities	3
SEDP 378	Teaching Math to Students With Disabilities	3
General education course		3
Term Hours:		17

Junior year

Fall semester

SEDP 320	Development and Implementation of Positive Behavior Support Plans	3
SEDP 350	Special Education Middle School Supervision	2
SEDP/EDUS 401	Assessment in Diverse Settings	3
SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
SEDP 461	Specialized Math Interventions for Students With High Incidence Disabilities	3
General education course		3
Term Hours:		17

Spring semester

3.0 GPA required for admission to clinical internship		
SEDP 311	Secondary Education and Transition Planning	3

SEDP 379	Assessment Practices in Autism and Developmental Disabilities	3
SEDP 380	Teaching Reading to Students With Disabilities	3
SEDP 389	IEP and Due Process in Special Education	3
SEDP 450	Special Education High School Supervision	2
Term Hours:		14
Senior year		
Fall semester		
SEDP 402	Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology	3
SEDP 404	Methods in Teaching Science and Social Studies for Students With Disabilities	3
SEDP 460	Specialized Reading and Writing Interventions for Students With Disabilities	3
SEDP 495	Universal Design for Learning and Transition	3
TEDU 510	Instructional Technology in PK-12 Environments	2
Term Hours:		14
Spring semester		
SEDP 415	Action Research in Education and Special Education: Capstone Project	3
SEDP 420	Special Education Leadership for Inclusive Schools	3
SEDP 499	Student Teaching	6
Term Hours:		12
Total Hours:		123

The minimum number of credit hours required for this degree is 123.

Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in early childhood

The purpose of the B.S.Ed. in Special Education and Teaching with a concentration in early childhood is to prepare students to serve as initially licensed special education teachers or early interventionists. The program will focus on providing students with the tools they need to work in settings serving children birth to age 5 with disabilities or who are at-risk for developmental delays, as well as work with their families. Students will garner the knowledge and skills to be able to recognize a child's developmental and social concerns, to formulate effective and personalized/individualized instruction, and to consult with parents, teachers, related service providers and administrators to incorporate accommodations and transitions across the child's educational program. Skills gained through this program are the ability to identify developmental concerns, adapt curriculum and support communication, motor, cognitive, social and self-help skills, as well as provide strategies for behavior management. Students will be prepared to support families of infants and toddlers through coaching around identified outcomes based on the child's specific needs, work as the lead teacher in preschool special education settings and provide consultation to preschool teachers who work with children with diverse abilities and backgrounds. Graduates will be prepared to work in early intervention and early childhood special education settings across Virginia, with

particular focus in urban and high-need areas. Successful completion of the program will result in licensure in special education/early childhood curriculum (B-5).

Student learning outcomes

1. **Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.
2. **Content:** Students will demonstrate knowledge of the subjects they will teach.
3. **Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
4. **Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to teacher preparation and a 3.0 GPA to be admitted to clinical internship.

Degree requirements for Special Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in early childhood

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
SEDP 200	Characteristics of Individuals With Disabilities	3
SEDP 201	Teaching Individuals With Mild and Moderate Disabilities	3
SEDP 203	Special Education Law	3
SEDP 216	Families and Professional Partnerships	3
SEDP 282	Multicultural Perspectives in Education	3
SEDP 330	Survey of Special Education	3
SEDP 402	Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology	3
SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
SEDP 415	Action Research in Education and Special Education: Capstone Project	3

SEDP 420	Special Education Leadership for Inclusive Schools	3
SEDP 495	Universal Design for Learning and Transition	3
• Concentration requirements		
ECSE 201	Infants and Young Children with Disabilities	3
ECSE 202	Social-Emotional Development in Early Childhood	3
ECSE 301	Developmental Assessment for Young Children	3
ECSE 302	Early Intervention for Infants and Toddlers with Disabilities	3
ECSE 303	Behavior Support in Early Childhood Special Education	3
ECSE 304	Communication and Language Development in Early Childhood	3
ECSE 351	Topics in Early Childhood Special Education	3
ECSE 401	Medical Aspects of Early Childhood Special Education	3
ECSE 410	Play-based Instruction for Inclusive Settings	3
ECSE 501	Principles of Infant/Early Childhood Mental Health	3
SOCS 302	Diverse Families and Children in the United States	3
TEDU 425	Emergent and Early Literacy	3
TEDU 452	Teaching English Language Learners	2
• Field-based learning and student teaching requirements		
ECSE 250	Infant/Toddler Fieldwork	2
ECSE 350	Preschool Fieldwork	2
ECSE 450	ECSE Consultation/Itinerant Fieldwork	2
ECSE 499	Student Teaching in Early Intervention/Early Childhood Special Education	6
Open electives		
Select any course.		3
Total Hours		123

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
SEDP 200	Characteristics of Individuals With Disabilities	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select quantitative foundations)		3
General education course		3

General education course		3
Term Hours:		15

Spring semester

EDUS 202	Diversity, Democracy and Ethics	4
SEDP 201	Teaching Individuals With Mild and Moderate Disabilities	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
General education course		3
Term Hours:		16

Sophomore year

Fall semester

ECSE 201	Infants and Young Children with Disabilities	3
SEDP 203	Special Education Law	3
SEDP 282	Multicultural Perspectives in Education	3
SEDP 330	Survey of Special Education	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Open elective		3
Term Hours:		18

Spring semester

2.8 GPA required for admission to teacher preparation		
ECSE 202	Social-Emotional Development in Early Childhood	3
ECSE 250	Infant/Toddler Fieldwork	2
ECSE 302	Early Intervention for Infants and Toddlers with Disabilities	3
EDUS 301	Human Development and Learning	3
SEDP 216	Families and Professional Partnerships	3
General education course		3
Term Hours:		17

Junior year

Fall semester

ECSE 301	Developmental Assessment for Young Children	3
ECSE 303	Behavior Support in Early Childhood Special Education	3
ECSE 304	Communication and Language Development in Early Childhood	3
ECSE 350	Preschool Fieldwork	2
ECSE 410	Play-based Instruction for Inclusive Settings	3
General education course		3
Term Hours:		17

Spring semester

3.0 GPA required for admission to clinical internship		
ECSE 351	Topics in Early Childhood Special Education	3
ECSE 450	ECSE Consultation/Itinerant Fieldwork	2

SEDP 402	Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology	3
SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
TEDU 452	Teaching English Language Learners	2
Term Hours:		13
Senior year		
Fall semester		
ECSE 401	Medical Aspects of Early Childhood Special Education	3
ECSE 501	Principles of Infant/Early Childhood Mental Health	3
SEDP 495	Universal Design for Learning and Transition	3
SOCS 302	Diverse Families and Children in the United States	3
TEDU 425	Emergent and Early Literacy	3
Term Hours:		15
Spring semester		
ECSE 499	Student Teaching in Early Intervention/Early Childhood Special Education	6
SEDP 415	Action Research in Education and Special Education: Capstone Project	3
SEDP 420	Special Education Leadership for Inclusive Schools	3
Term Hours:		12
Total Hours:		123

The minimum number of credit hours required for this degree is 123.

Disability Studies, Certificate in (Undergraduate certificate)

The purpose of the certificate is to prepare undergraduate students for a complex, global world comprising an increasingly diverse society that includes people with disabilities. The focus is on engaging students in interdisciplinary experiences to help them understand contemporary disability issues, research and practices within a social, political, cultural and historical context.

Students who complete the Certificate in Disability Studies will be well-equipped to meet the skills and competencies that many employers seek. As people with disabilities enter the workforce in increasing numbers, nondisabled employees who leave college having gained first-hand knowledge of and experience with disabled individuals will be in an excellent position to understand their needs and to interact with them in a broad range of employment settings. The program will emphasize both oral and written communication to boost students' practice in those vital skills before they enter the workplace.

Learning outcomes

Upon program completion:

1. Students will demonstrate an understanding of disability in historical, political and cultural contexts.
2. Students will provide definitions and models of disability, including medical and social models.

3. Students will demonstrate knowledge of critical issues and research being debated in the field of disability studies.
4. Students will demonstrate an understanding of the relationship among disability culture, disability communities and rights-based struggles, including broad-based human rights.
5. Students will design and conduct a disability-specific project relevant to their major field of study based on engagement within the community.

The Certificate in Disability Studies runs concurrently with a student's major and is not a stand-alone program. Thus, the program is designed to be completed in three consecutive semesters with students taking one course per semester in conjunction with their major course work.

Interested students should submit an application to the VCU Partnership for People with Disabilities, which administers the certificate program. Students who have successfully completed 30 credit hours with a minimum GPA of 2.5 and a declared major may apply for the certificate. International students must have the minimum TOEFL score that is required by their major. Applicants will need to submit a one-page essay to disabstudies@vcu.edu that describes their interest in the program and discusses how they expect to apply the material to their program of study. Upon acceptance to the certificate program, a Change of Major form will be signed by the student and submitted to Records and Registration by the Partnership for People with Disabilities.

For more information contact disabstudies@vcu.edu.

Curriculum requirements

The nine-credit curriculum will prepare students from a broad range of disciplines to understand issues faced by people with disabilities and their relationship to society. Students will enroll in two lecture-based courses and one course taught in a seminar format. The culminating seminar will allow each student to apply the content within the program in a unique manner to his or her major field of study.

Course	Title	Hours
IDDS 200	Disability History and Culture	3
IDDS 201	Disability, Diversity and Human Rights	3
IDDS 300	Applications of Disability Studies	3
Total Hours		9

The minimum total of credit hours required for this certificate is nine.

The sample plan of study shows classes taken in conjunction with major course work.

Year one		
Fall semester		Hours
IDDS 200	Disability History and Culture	3
Term Hours:		3
Spring semester		
IDDS 201	Disability, Diversity and Human Rights	3
Term Hours:		3
Year two		
Fall semester		

IDDS 300	Applications of Disability Studies	3
Term Hours:		3
Total Hours:		9

Early intervention and early childhood special education, minor in

The minor in early intervention and early childhood special education is meant to provide students with specialized courses that will increase their understanding of typical and atypical development, as well strategies to support young children with disabilities and their families when working as a professional in inclusive settings where young children with disabilities are served. Students who complete this minor will not meet the requirements needed for teacher licensure in the state of Virginia as outlined by the Virginia Department of Education. For information regarding licensure, please contact the School of Education's Student Services Center (<https://soe.vcu.edu/current-students/student-services-center/>).

Students are able to declare the early intervention and early childhood special education minor after completing 30 credits of baccalaureate course work. Students must have a minimum GPA of 2.8 to declare the minor and must maintain a minimum GPA of 2.8 throughout the course work in the minor. The minor requires 18 credits, consisting of the following:

Course	Title	Hours
ECSE 201	Infants and Young Children with Disabilities	3
ECSE 202	Social-Emotional Development in Early Childhood	3
SEDP 216	Families and Professional Partnerships	3
Select three of the following courses:		9
ECSE 301	Developmental Assessment for Young Children	
ECSE 303	Behavior Support in Early Childhood Special Education	
ECSE 304	Communication and Language Development in Early Childhood	
ECSE 401	Medical Aspects of Early Childhood Special Education	
ECSE 410	Play-based Instruction for Inclusive Settings	
ECSE 501	Principles of Infant/Early Childhood Mental Health	
SEDP 402	Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology	
Total Hours		18

Special education, minor in

The minor in special education is meant to provide students with specialized courses that will support the development of remedial, decision-making, and consultative skills and understandings requirements of a professional in inclusive settings where students with disabilities are served. Students who complete this minor will not meet

the requirements needed for teacher licensure in the state of Virginia as outlined by the Virginia Department of Education. For information regarding licensure, please contact the School of Education (<https://soe.vcu.edu/current-students/student-services-center/>)' (<https://soe.vcu.edu/current-students/student-services-center/>)s Student Services Center (<https://soe.vcu.edu/current-students/student-services-center/>).

Students are able to declare the special education minor after completing 30 credits of baccalaureate course work. Students must have a minimum GPA of 2.8 to declare the minor and must maintain a minimum GPA of 2.8 throughout the course work in the minor. The minor in special education requires 18 credits, consisting of the following:

Course	Title	Hours
SEDP 201	Teaching Individuals With Mild and Moderate Disabilities	3
SEDP 203	Special Education Law	3
SEDP 330	Survey of Special Education	3
SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
SEDP 495	Universal Design for Learning and Transition	3
Select one of the following courses:		3
SEDP 320	Development and Implementation of Positive Behavior Support Plans	
SEDP 378	Teaching Math to Students With Disabilities	
SEDP 380	Teaching Reading to Students With Disabilities	
Total Hours		18

Department of Teaching and Learning

Joan Rhodes, Ph.D.

Associate professor and chair

The Department of Teaching and Learning is committed to excellence in the initial and continuing preparation of teachers for schools, government agencies, for-profit and nonprofit organizations, working with diverse groups; to modeling and encouraging critical reflection on practice; to collaborating and forming educational partnerships; to applying research and conducting scholarly endeavors that examine educational processes, issues and concerns; and to providing assistance and service to local, state, regional, national and international communities. Learn more by visiting the Department of Teaching and Learning webpage (<https://soe.vcu.edu/about-us/departments/teaching-and-learning/>).

- Early Childhood Education and Teaching, Bachelor of Science in Education (B.S.Ed.) (p. 540)
- Elementary Education and Teaching, Bachelor of Science in Education (B.S.Ed.) (p. 542)
- Health and Physical Education, Bachelor of Science in Education (B.S.Ed.) (p. 544)
- Human and Organizational Development, Bachelor of Arts (B.A.) (p. 546)
- Secondary Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in engineering education (p. 548)
- Education, minor in (p. 551)

Early Childhood Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

The purpose of the B.S.Ed. in Early Childhood Education and Teaching degree is to prepare undergraduate students for roles as teachers and care providers of infants, toddlers and young children in schools and community preschool settings. The program will focus on providing students with a solid foundation in child development, educational psychology and the role of the family and society in education. Students will be prepared to teach in diverse classroom settings through purposefully integrated fieldwork and internship experiences. The program will emphasize working with young learners in inclusive settings and the value of play in early childhood instructional environments. The program prepares graduates to be reflective educators who demonstrate an in-depth understanding of science, social studies, mathematics and literacy pedagogy and content. Students will develop skills to advocate for equitable learning opportunities for all children. Upon successful completion of the program, and with the recommendation of the School of Education, students are eligible to receive initial licensure for early/primary education (PK-3) from the Virginia Department of Education.

See Admission to undergraduate programs (p. 532) for admission requirements to this program.

Student learning outcomes

- Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.
- Content:** Students will demonstrate knowledge of the subjects they will teach.
- Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
- Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to teacher preparation and a 3.0 GPA to be admitted to clinical internship.

Degree requirements for Early Childhood Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		

• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
or PSYC 301	Child Psychology	
or PSYC 304	Life Span Developmental Psychology	
EDUS 304	Educational Psychology for Teacher Preparation	2
SEDP 330	Survey of Special Education	3
SEDP/EDUS 401	Assessment in Diverse Settings	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 452	Teaching English Language Learners	2
TEDU 510	Instructional Technology in PK-12 Environments	2
Teacher education requirements		
ECSE 301	Developmental Assessment for Young Children	3
ECSE 410	Play-based Instruction for Inclusive Settings	3
TEDU 101	Introduction to Teaching	3
TEDU 385	Teaching Writing Through Children's Literature	3
TEDU 390	Movement Education	3
TEDU 411	Integrating the Arts in Curriculum for Young Children	3
or ARTE 301	Art for Elementary Teachers	
TEDU 416	Math/Science Methods for Early Childhood Education	4
TEDU 425	Emergent and Early Literacy	3
TEDU 466	Literacy Assessment and Intervention in the Early/Elementary Classroom	4
TEDU 471	Internship I (PK-K)	4
TEDU 475	Internship II (Grades 1-3)	4
TEDU 481	Teaching as a Profession	3
TEDU 490	Social Studies Methods for Early Learners	2
Ancillary requirements		
Math requirements		
MATH 303	Investigations in Geometry	3
MATH 361	Numbers and Operations	3
MATH 362	Algebra and Functions	3
STAT 206	Data Analysis and Statistics for Elementary Education	3
or STAT 208	Statistical Thinking	
or STAT 210	Basic Practice of Statistics	
Science requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
or BIOL 103	Global Environmental Biology	
or BIOL 151	Introduction to Biological Sciences I	

CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
or CHEM 110	Chemistry and Society	
INSC 201	Energy!	3
or INSC 300	Experiencing Science	
or PHYS 101	Foundations of Physics	
ENVS 105	Physical Geology	3
or ENVS 201	Earth System Science	
or ENVS 301	Introduction to Meteorology	
or ENVS 310	Introduction to Oceanography	
or PHYS 103	Elementary Astronomy	
or URSP 204	Physical Geography	
Science labs ¹		2
Social studies/history requirements		
ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
HIST 103	Survey of American History	3
HIST 205	Survey of Virginia History	3
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
Total Hours		123

1

Two of the science content courses must pair with a one-credit lab for a total of two credits of laboratory course work in the degree program. Possible partner laboratory courses include BIOZ 101, BIOZ 151, BIOZ 152, PHYZ 101, PHYZ 103, CHEZ 101, CHEZ 110, ENVZ 105 and URSZ 204.

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (any satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
or		
BIOL 103	or Global Environmental Biology	
or		
BIOL 151	or Introduction to Biological Sciences I	
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
TEDU 101	Introduction to Teaching	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		

General education course (select quantitative foundations)	3
Science lab (if taken)	1

Term Hours: 16

Spring semester

CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
or		
CHEM 110	or Chemistry and Society	
EDUS 202	Diversity, Democracy and Ethics	4
HIST 103	Survey of American History	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course	3	
Science lab (if taken)	0-1	

Term Hours: 16

Sophomore year

Fall semester

EDUS 301	Human Development and Learning	3
or		
PSYC 301	or Child Psychology	
or		
PSYC 304	or Life Span Developmental Psychology	
MATH 361	Numbers and Operations	3
PHYS 101	Foundations of Physics	3
or		
INSC 201	or Energy!	
or		
INSC 300	or Experiencing Science	
TEDU 390	Movement Education	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Science lab (if taken)	0-1	

Term Hours: 16

Spring semester

2.8 GPA required for admission to teacher preparation		
ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
ENVS 105	Physical Geology	3
or		
ENVS 201	or Earth System Science	
or		
ENVS 301	or Introduction to Meteorology	
or		
ENVS 310	or Introduction to Oceanography	
or		
PHYS 103	or Elementary Astronomy	
or		
URSP 204	or Physical Geography	
MATH 362	Algebra and Functions	3
SEDP 330	Survey of Special Education	3
General education course	3	

Science lab (if taken)		0-1
Term Hours:		15
Junior year		
Fall semester		
ECSE 410	Play-based Instruction for Inclusive Settings	3
MATH 303	Investigations in Geometry	3
TEDU 385	Teaching Writing Through Children's Literature	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 425	Emergent and Early Literacy	3
Term Hours:		15
Spring semester		
3.0 GPA required for admission to clinical internship		
EDUS 304	Educational Psychology for Teacher Preparation	2
SEDP/EDUS 401	Assessment in Diverse Settings	3
HIST 205	Survey of Virginia History	3
STAT 206 or STAT 208 or STAT 210	Data Analysis and Statistics for Elementary Education or Statistical Thinking or Basic Practice of Statistics	3
TEDU 466	Literacy Assessment and Intervention in the Early/Elementary Classroom	4
Term Hours:		15
Senior year		
Fall semester		
ECSE 301	Developmental Assessment for Young Children	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
TEDU 411 or ARTE 301	Integrating the Arts in Curriculum for Young Children or Art for Elementary Teachers	3
TEDU 416	Math/Science Methods for Early Childhood Education	4
TEDU 490	Social Studies Methods for Early Learners	2
TEDU 510	Instructional Technology in PK-12 Environments	2
Term Hours:		17
Spring semester		
TEDU 452	Teaching English Language Learners	2
TEDU 471	Internship I (PK-K)	4
TEDU 475	Internship II (Grades 1-3)	4
TEDU 481	Teaching as a Profession	3
Term Hours:		13
Total Hours:		123

The minimum number of credit hours required for this degree is 123.

Elementary Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

The purpose of the B.S.Ed. in Elementary Education and Teaching degree is to prepare undergraduate students for roles as teachers of young children in schools, grades pre-kindergarten to six, and community preschool settings. The program will focus on providing students with a solid foundation in child development, education psychology and the role of the family and society in education. Students will be prepared to teach in diverse classroom settings through purposefully integrated fieldwork and internship experiences. The program prepares graduates to be reflective educators who demonstrate an in-depth understanding of science, social studies, mathematics and literacy pedagogy and content. Students will develop skills to advocate for equitable learning opportunities for all children. Upon successful completion of the program, and with the recommendation of the School of Education, students are eligible to receive initial licensure for elementary education (PK-6) from the Virginia Department of Education.

See Admission to undergraduate programs (p. 532) for admission requirements to this program.

Student learning outcomes

- Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.
- Content:** Students will demonstrate knowledge of the subjects they will teach.
- Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
- Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to teacher preparation and a 3.0 GPA to be admitted to clinical internship.

Degree requirements for Elementary Education and Teaching, Bachelor of Science in Education (B.S.Ed.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30

Major requirements

• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4

EDUS 301 or PSYC 301 or PSYC 304	Human Development and Learning Child Psychology Life Span Developmental Psychology	3
EDUS 304	Educational Psychology for Teacher Preparation	2
SEDP 330	Survey of Special Education	3
SEDP/EDUS 401	Assessment in Diverse Settings	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 452	Teaching English Language Learners	2
TEDU 510	Instructional Technology in PK-12 Environments	2
Teacher education requirements		
TEDU 101	Introduction to Teaching	3
TEDU 386	Children's Literature I	3
TEDU 389	The Teaching of Writing Skills	3
TEDU 390	Movement Education	3
TEDU 411	Integrating the Arts in Curriculum for Young Children	3
or ARTE 301	Art for Elementary Teachers	
TEDU 417	Early/Elementary Science Methods	3
TEDU 422	Early/Elementary Math Methods	3
TEDU 426	Teaching Reading and Other Language Arts	3
TEDU 466	Literacy Assessment and Intervention in the Early/Elementary Classroom	4
TEDU 472	Elementary Internship I (PK-2)	4
TEDU 474	Elementary Internship II (Grades 3-5)	4
TEDU 481	Teaching as a Profession	3
TEDU 496	Early/Elementary Social Studies Methods	3
Ancillary requirements		
Math requirements		
MATH 303	Investigations in Geometry	3
MATH 361	Numbers and Operations	3
MATH 362	Algebra and Functions	3
STAT 206	Data Analysis and Statistics for Elementary Education	3
or STAT 208	Statistical Thinking	
or STAT 210	Basic Practice of Statistics	
Science requirements		
BIOL 101	Biological Concepts (any satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
or BIOL 103	Global Environmental Biology	
or BIOL 151	Introduction to Biological Sciences I	
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
or CHEM 110	Chemistry and Society	
INSC 201	Energy!	3

or INSC 300	Experiencing Science	
or PHYS 101	Foundations of Physics	
ENVS 105	Physical Geology	3
or ENVS 201	Earth System Science	
or ENVS 301	Introduction to Meteorology	
or ENVS 310	Introduction to Oceanography	
or PHYS 103	Elementary Astronomy	
or URSP 204	Physical Geography	
Science labs ¹		2
Social studies/history requirements		
ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
HIST 103	Survey of American History	3
HIST 205	Survey of Virginia History	3
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
Total Hours		123

1

Two of the science content courses must pair with a one-credit lab for a total of two credits of laboratory course work in the degree program. Possible partner laboratory courses include BIOZ 101, BIOZ 151, BIOZ 152, PHYZ 101, PHYZ 103, CHEZ 101, CHEZ 110, ENVZ 105 and URSZ 204.

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (any satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
or BIOL 103	Global Environmental Biology	
or BIOL 151	Introduction to Biological Sciences I	
POLI 103	U.S. Government (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
TEDU 101	Introduction to Teaching	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select quantitative foundations)		3
Science lab (if taken)		0-1
Term Hours:		16

Spring semester

CHEM 101 or CHEM 110	General Chemistry I (satisfies general education AOI for scientific and logical reasoning) or Chemistry and Society	3
EDUS 202	Diversity, Democracy and Ethics	4
HIST 103	Survey of American History	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Science lab (if taken)		0-1

Term Hours: 16

Sophomore year

Fall semester

EDUS 301 or PSYC 301 or PSYC 304	Human Development and Learning or Child Psychology or Life Span Developmental Psychology	3
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MATH 361	Numbers and Operations	3
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PHYS 101 or INSC 201 or INSC 300	Foundations of Physics or Energy! or Experiencing Science	3
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TEDU 390	Movement Education	3
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UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
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Science lab (if taken)		0-1
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Term Hours: 16

Spring semester

2.8 GPA required for admission to teacher preparation

ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
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ENVS 105 or ENVS 201 or ENVS 301 or ENVS 310 or PHYS 103 or URSP 204	Physical Geology or Earth System Science or Introduction to Meteorology or Introduction to Oceanography or Elementary Astronomy or Physical Geography	3
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MATH 362	Algebra and Functions	3
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SEDP 330	Survey of Special Education	3
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General education course		3
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Science lab (if taken)		0-1
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Term Hours: 15

Junior year

Fall semester

MATH 303	Investigations in Geometry	3
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TEDU 386	Children's Literature I	3
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TEDU 389	The Teaching of Writing Skills	3
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TEDU 413	Curriculum Methods and Instructional Models	3
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TEDU 426	Teaching Reading and Other Language Arts	3
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Term Hours: 15

Spring semester

3.0 GPA required for admission to clinical internship

EDUS 304	Educational Psychology for Teacher Preparation	2
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SEDP/EDUS 401	Assessment in Diverse Settings	3
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HIST 205	Survey of Virginia History	3
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STAT 206 or STAT 208 or STAT 210	Data Analysis and Statistics for Elementary Education or Statistical Thinking or Basic Practice of Statistics	3
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TEDU 466	Literacy Assessment and Intervention in the Early/Elementary Classroom	4
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Term Hours: 15

TEDU 466	Literacy Assessment and Intervention in the Early/Elementary Classroom	4
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Term Hours: 15

Senior year

Fall semester

TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
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TEDU 411 or ARTE 301	Integrating the Arts in Curriculum for Young Children or Art for Elementary Teachers	3
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TEDU 417	Early/Elementary Science Methods	3
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TEDU 422	Early/Elementary Math Methods	3
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TEDU 496	Early/Elementary Social Studies Methods	3
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TEDU 510	Instructional Technology in PK-12 Environments	2
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Term Hours: 17

TEDU 452	Teaching English Language Learners	2
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TEDU 472	Elementary Internship I (PK-2)	4
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TEDU 474	Elementary Internship II (Grades 3-5)	4
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TEDU 481	Teaching as a Profession	3
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Term Hours: 13

Total Hours: 123

The minimum number of credit hours required for this degree is 123.

Health and Physical Education, Bachelor of Science in Education (B.S.Ed.)

The purpose of the B.S.Ed. in Health and Physical Education degree is to prepare students to serve as health and physical education teachers in PreK-12 schools, as well as to serve as educators and leaders in schools and community-based settings. The program will focus on providing students with the knowledge and experiences they need to successfully implement national and state health and physical education standards. Students will complete course work enabling them to be successful in a variety of learning environments. Graduates will be prepared to work in public and private elementary, middle and high schools across Virginia,

with particular focus in urban and high-need areas. The health and physical education program consists of rigorous course work and field experiences that will enable graduates to be leaders in the profession. Successful completion of the program will result in licensure for health and physical education (PK-12).

See Admission to undergraduate programs (p. 532) for admission requirements to this program.

Student learning outcomes

- Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.
- Content:** Students will demonstrate knowledge of the subjects they will teach.
- Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
- Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to teacher preparation and a 3.0 GPA to be admitted to clinical internship.

Degree requirements for Health and Physical Education, Bachelor of Science in Education (B.S.Ed.)

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
EDUS 304	Educational Psychology for Teacher Preparation	2
SEDP 330	Survey of Special Education	3
SEDP/EDUS 401	Assessment in Diverse Settings	3
TEDU 101	Introduction to Teaching	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 452	Teaching English Language Learners	2

TEDU 510	Instructional Technology in PK-12 Environments	2
TEDU 102	Health Education as a Discipline	3
TEDU 103	Lifetime Fitness, Wellness and Nutrition for the Health and Physical Educator	3
TEDU 200	Motor Learning and Performance	3
TEDU 201	Assessment and Technology in Health and Physical Education	2
TEDU 202	Health Education Content	3
TEDU 204	Outdoor Education	3
TEDU 205	History and Philosophy of Health and Physical Education	3
TEDU 300	Adapted Physical Education	3
TEDU 301	Biomechanics of Teaching Movement Skills	3
TEDU 302	Elementary Methods of Physical Education	2
TEDU 303	Teaching Team and Individual Sports for Lifetime Fitness	3
TEDU 304	Secondary Methods of Physical Education	2
TEDU 314	Practicum for Health and Physical Education	2
TEDU 402	Becoming a Health and Physical Education Professional	1
TEDU 403	Teaching Health Education	2
TEDU 405	Seminar for Student Teaching	1
TEDU 493	Field Experience I	4
TEDU 495	Field Experience II	4
TEDU 562	Reading Instruction in the Content Areas	3

Ancillary requirements

BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
BIOL 205	Basic Human Anatomy	4
HPEX 372	Survey of Kinesiology and Physiology of Exercise	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4

Total Hours 120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
TEDU 103	Lifetime Fitness, Wellness and Nutrition for the Health and Physical Educator	3

UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select quantitative foundations)		3
General education course		3
Term Hours:		16

Spring semester

EDUS 202	Diversity, Democracy and Ethics	4
TEDU 101	Introduction to Teaching	3
TEDU 102	Health Education as a Discipline	3
TEDU 205	History and Philosophy of Health and Physical Education	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		16

Sophomore year**Fall semester**

BIOL 205	Basic Human Anatomy	4
EDUS 301	Human Development and Learning	3
TEDU 204	Outdoor Education	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		16

Spring semester

2.8 GPA required for admission to teacher preparation		
PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory	
TEDU 200	Motor Learning and Performance	3
TEDU 202	Health Education Content	3
General education course		3
General education course		3
Term Hours:		16

Junior year**Fall semester**

SEDP 330	Survey of Special Education	3
TEDU 201	Assessment and Technology in Health and Physical Education	2
TEDU 303	Teaching Team and Individual Sports for Lifetime Fitness	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 510	Instructional Technology in PK-12 Environments	2
General education course		3
Term Hours:		16

Spring semester

3.0 GPA required for admission to clinical internship		
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EDUS 304	Educational Psychology for Teacher Preparation	2
HPEX 372	Survey of Kinesiology and Physiology of Exercise	3
TEDU 300	Adapted Physical Education	3
TEDU 301	Biomechanics of Teaching Movement Skills	3
TEDU 302	Elementary Methods of Physical Education	2
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
Term Hours:		16

Senior year**Fall semester**

SEDP 401	Assessment in Diverse Settings	3
TEDU 304	Secondary Methods of Physical Education	2
TEDU 314	Practicum for Health and Physical Education	2
TEDU 403	Teaching Health Education	2
TEDU 562	Reading Instruction in the Content Areas	3
Term Hours:		12

Spring semester

TEDU 402	Becoming a Health and Physical Education Professional	1
TEDU 405	Seminar for Student Teaching	1
TEDU 452	Teaching English Language Learners	2
TEDU 493	Field Experience I	4
TEDU 495	Field Experience II	4
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Human and Organizational Development, Bachelor of Arts (B.A.)

The B.A. in Human and Organizational Development is a 120-credit-hour program that prepares individuals for a broad range of positions including as human resource development professionals, organizational and employee development professionals, instructional designers or talent development professionals. The program focuses on providing students with the knowledge and skills to plan and develop learning programs and interventions for adult learners using sound pedagogy for teaching adults in a variety of organizational settings. Students will learn to assess and evaluate adult learning and learn to adapt instructional programs based on the needs of the learners as well as the organization. Through comprehensive learning and development experiences in both class settings and a required internship, students will gain an understanding of working with diverse groups of learners. The program will provide opportunities for students to learn skills in developing programs for adult learning and practice them in a professional setting. Graduates of the program will be highly trained professionals capable of planning, developing and evaluating programs for adult learners both in-person and through online delivery formats.

Student learning outcomes

Students will acquire knowledge about discipline-specific and theoretical concepts critical to the

development and learning of employees in the workplace. Students will be able to:

- Plan, develop and implement learning and development experiences for adult learners in a variety of settings
- Assess learning needs and evaluate the learning of both students and the organization through learning and development experiences
- Develop learning interventions and assessments appropriate for employees/participants from diverse cultural backgrounds
- Utilize adult learning principles and knowledge of organizational development to create learning and development experiences/interventions for the intended audience
- Use appropriate technology in learning and organizational development curriculum development
- Provide strategy for appropriate learning and development interventions
- Demonstrate project management skills in organizing and managing a learning/development project for adult learners

Curriculum requirements

The B.A. in Human and Organizational Development will require a minimum of 120 credit hours. The program includes a required internship to provide students practical experience through experiential learning activities. The focus of the curriculum is to provide students with the practical courses which will prepare them for positions in human resource development and organizational development in for-profit and nonprofit organizations.

Degree requirements for Human and Organizational Development, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
ADLT 300	Introduction to Human and Organizational Development	3
ADLT 301	Adult Learning Theory and Practice	3
ADLT 302	Basics of Instructional Design for Adult Learners	3
ADLT 303	Facilitation Skills for Human and Organizational Development	2
ADLT 304	Designing Online Learning for Adult Learners	3
ADLT 400	Developing Intercultural Competencies in the Workplace: Diversity, Inclusion and Equity	3
ADLT 401	Organizational Development and Change	3
ADLT 404	Team Learning and Development	3
ADLT 405	Project Management in Learning and Development	3
ADLT 406	Consulting Skills in Adult Learning Environments	3

ADLT 490	Internship in Human and Organizational Development	3
EDUS 300	School and Society	3
Ancillary requirements		
ECON 203	Introduction to Economics (satisfies general education AOI for global perspectives)	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
MASC/INTL 151 or WRLD 203	Global Communications ¹ Cultural Texts and Contexts: ____	3
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
Foreign language (200-level)		3
Restricted electives (Select 15 credits from the following.)		15
ACCT 202	Accounting for Non-business Majors	
BUSN 323	Legal Environment of Business	
CLED 405	A Survey of Career Counseling	
MGMT 310	Managing People in Organizations	
MGMT 319	Leadership	
MGMT 331	Human Resource Management	
MGMT 403	Human Resource Development	
SEDP 495	Universal Design for Learning and Transition	
STUA XXX Study abroad		
TEDU 552	Methods for Teaching Multilingual Learners	

Open electives		
Select any course.		32

Total Hours		120
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1

MASC 151/INTL 151 satisfies general education AOI for global perspectives; WRLD 203 satisfies general education BOK for humanities and fine arts and AOI for creative inquiry.

The minimum number of credit hours required for this degree is 120.

Freshman year		Hours
Fall semester		
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies BOK for social/behavioral science and AOI for diversities in the human experience)	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3

Foreign language (101 level) or open elective	4
General education quantitative foundation course (MATH 131 or STAT 208 suggested)	3
Open electives	3

Term Hours: 16

Spring semester

INFO 160 Digital Literacy: Computer Concepts, Internet, Digital Devices	1
UNIV 112 Focused Inquiry II (satisfies general education UNIV foundations) Play course video for Focused Inquiry II	3
Foreign language (102 level) or open elective	4
General education course (select BOK for natural sciences)	3
Open electives	3

Term Hours: 14

Sophomore year

Fall semester

PSYC 101 Introduction to Psychology Play course video for Introduction to Psychology	4
UNIV 200 Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language (200 level if not previously taken)	3
General education course	3
Open elective	3

Term Hours: 16

Spring semester

ECON 203 Introduction to Economics (satisfies general education AOI for global perspectives)	3
MASC 151 Global Communications ¹ or WRLD 203 or Cultural Texts and Contexts: ____ ¹	3
General education course	3
Open electives	6

Term Hours: 15

Junior year

Fall semester

ADLT 300 Introduction to Human and Organizational Development	3
ADLT 301 Adult Learning Theory and Practice	3
ADLT 302 Basics of Instructional Design for Adult Learners	3
EDUS 300 School and Society	3
Restricted elective	3

Term Hours: 15

Spring semester

ADLT 303 Facilitation Skills for Human and Organizational Development	2
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ADLT 304 Designing Online Learning for Adult Learners	3
ADLT 400 Developing Intercultural Competencies in the Workplace: Diversity, Inclusion and Equity	3
Restricted elective	3
Open elective	3

Term Hours: 14

Senior year

Fall semester

ADLT 401 Organizational Development and Change	3
ADLT 405 Project Management in Learning and Development	3
ADLT 406 Consulting Skills in Adult Learning Environments	3
Restricted elective	3
Open elective	3

Term Hours: 15

Spring semester

ADLT 404 Team Learning and Development	3
ADLT 490 Internship in Human and Organizational Development	3
Restricted electives	6
Open elective	3

Term Hours: 15

Total Hours: 120

¹

MASC 151/INTL 151 satisfies general education AOI for global perspectives; WRLD 203 satisfies general education BOK for humanities and fine arts and AOI for creative inquiry.

The minimum number of credit hours required for this degree is 120.

Secondary Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in engineering education

The purpose of the B.S.Ed. in Secondary Education and Teaching with a concentration in engineering education is to prepare students to serve as initially licensed teachers in grades 6-12, as well as to serve as educators and leaders in schools and community-based settings. The program will focus on providing students with a solid foundation in secondary education, engineering, mathematics and sciences to meet the requirements for licensure. Through the core education curriculum, students will become knowledgeable about professional roles and workplace responsibilities while learning basic abilities in the planning and implementation of engineering lessons for students in grades 6-12. The core curriculum instills fundamental knowledge and skills, with opportunities for observation and application in a variety of engineering settings. Through the core engineering, science and mathematics curriculum, students will develop the content knowledge and skills of those fields in order to deliver relevant and rigorous lessons in engineering and integration of other content areas with engineering. Graduates will be prepared to work in public and private middle and high

schools across Virginia, with particular focus in urban and other high-need areas. Graduates will be capable of working with diverse learners and adapting instructional programs based on the needs of their students and clients. Successful completion of the program will result in licensure in secondary engineering education (6-12).

See Admission to undergraduate programs (p. 532) for admission requirements to this program.

Student learning outcomes

- Learner and learning:** Students will understand human development and learning theory appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age population in cultural backgrounds and styles of learning.
- Content:** Students will demonstrate knowledge of the subjects they will teach.
- Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
- Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

Special requirements

- Students must have received a minimum grade of C in all required education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Students must have received a minimum grade of C in all prerequisite courses for all required upper-level education courses (CLED, ECSE, EDUS, SEDP and TEDU).
- Required education courses (CLED, ECSE, EDUS, SEDP and TEDU) in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.8 GPA to be admitted to teacher preparation and a 3.0 GPA to be admitted to clinical internship.

Degree requirements for Secondary Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in engineering education

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
EDUS 304	Educational Psychology for Teacher Preparation	2
SEDP 330	Survey of Special Education	3
SEDP/EDUS 401	Assessment in Diverse Settings	3
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 452	Teaching English Language Learners	2

TEDU 510	Instructional Technology in PK-12 Environments	2
• Concentration requirements		
Science and math		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Engineering		
Select from:		3-4
CLSE 101	Introduction to Engineering	
EGRB 102 & EGRB 104	Introduction to Biomedical Engineering and Introduction to Biomedical Engineering Laboratory	
EGRE 101	Introduction to Engineering	
EGMN 103 & EGMN 190 & EGMN 203	Mechanical and Nuclear Engineering Practicum I and Introduction to Mechanical and Nuclear Engineering and Mechanical and Nuclear Engineering Practicum II	
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
EGMN 102	Engineering Statics	3
EGMN 202	Mechanics of Deformables	3
EGMN 215	Engineering Visualization and Computation	3
EGRE 206	Electric Circuits	4
EGRE 245 or CMSC 255	Engineering Programming Introduction to Programming	4
EGRE 246 or CMSC 256	Advanced Engineering Programming Data Structures and Object Oriented Programming	3-4
Secondary education		
TEDU 381	Middle School Practicum for Engineering Education	2
TEDU 382	High School Practicum for Engineering Education	1
TEDU 420	Teaching Middle and High School Engineering	3
TEDU 478	Internship I for Engineering Education	4
TEDU 479	Internship II for Engineering Education	4
TEDU 480	Investigations and Trends in Teaching: Engineering	3
TEDU 562	Reading Instruction in the Content Areas	3
Ancillary requirements		
BIOL 103	Global Environmental Biology (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education AOI for scientific and logical reasoning)	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4

Total Hours **123**

The minimum number of credit hours required for this degree is 123.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education AOI for scientific and logical reasoning)	4
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry I	
	Select one of the following:	3-4
CLSE 101	Introduction to Engineering	-
EGRB 102 & EGRB 104	Introduction to Biomedical Engineering and Introduction to Biomedical Engineering Laboratory	-
EGRE 101	Introduction to Engineering	-
EGMN 103 & EGMN 190 & EGMN 203	Mechanical and Nuclear Engineering Practicum I and Introduction to Mechanical and Nuclear Engineering and Mechanical and Nuclear Engineering Practicum II	-
Term Hours:		14-15

Spring semester

BIOL 103	Global Environmental Biology (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
MATH 201	Calculus with Analytic Geometry II	4
PHYS 207	University Physics I	5
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
	Play course video for Focused Inquiry II	
Term Hours:		16

Sophomore year

Fall semester		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4

EDUS 202	Diversity, Democracy and Ethics	4
EGMN 102	Engineering Statics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		17

Spring semester

2.8 GPA required for admission to teacher preparation		
EDUS 301	Human Development and Learning	3
EGMN 215	Engineering Visualization and Computation	3
EGRE 245 or CMSC 255	Engineering Programming or Introduction to Programming	4
STAT 441	Applied Statistics for Engineers and Scientists	3
General education course		3
Term Hours:		16

Junior year

Fall semester		
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
EGMN 202	Mechanics of Deformables	3
EGRE 246 or CMSC 256	Advanced Engineering Programming or Data Structures and Object Oriented Programming	3-4
TEDU/SEDP 410	Building a Community of Learners: Classroom Management	3
General education course		3-4
Term Hours:		16-18

Spring semester

3.0 GPA required for admission to clinical internship		
EDUS 304	Educational Psychology for Teacher Preparation	2
EGRE 206	Electric Circuits	4
PHYS 208	University Physics II	5
SEDP 330	Survey of Special Education	3
TEDU 510	Instructional Technology in PK-12 Environments	2
Term Hours:		16

Senior year

Fall semester		
SEDP/EDUS 401	Assessment in Diverse Settings	3
TEDU 381	Middle School Practicum for Engineering Education	2
TEDU 382	High School Practicum for Engineering Education	1
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 420	Teaching Middle and High School Engineering	3
TEDU 562	Reading Instruction in the Content Areas	3
Term Hours:		15

Spring semester

TEDU 452	Teaching English Language Learners	2
TEDU 478	Internship I for Engineering Education	4
TEDU 479	Internship II for Engineering Education	4
TEDU 480	Investigations and Trends in Teaching: Engineering	3
Term Hours:		13
Total Hours:		123-126

The minimum number of credit hours required for this degree is 123.

Education, minor in

The minor in education is meant to allow students to further explore educational theories and practices. Students who complete this minor will not meet the requirements needed for teacher licensure in the state of Virginia as outlined by the Virginia Department of Education. For information regarding licensure, please contact the School of Education (<https://soe.vcu.edu/current-students/student-services-center/>)' (<https://soe.vcu.edu/current-students/student-services-center/>)s Student Services Center (<https://soe.vcu.edu/current-students/student-services-center/>).

Students must have a minimum GPA of 2.8 to declare a minor in education and must maintain a minimum GPA of 2.8 throughout the course work in the minor. The minor in education requires a minimum of 18 credits, consisting of the following:

Course	Title	Hours
EDUS 202	Diversity, Democracy and Ethics	4
EDUS 301	Human Development and Learning	3
TEDU 410	Building a Community of Learners: Classroom Management	3
TEDU 413	Curriculum Methods and Instructional Models	3
TEDU 562	Reading Instruction in the Content Areas	3
Select one of the following courses:		2-3
TEDU 403	Teaching Health Education	
TEDU 510	Instructional Technology in PK-12 Environments	
TEDU 546	Teaching Foreign Language	
TEDU 552	Methods for Teaching Multilingual Learners	
Total Hours		18-19

L. DOUGLAS WILDER SCHOOL OF GOVERNMENT AND PUBLIC AFFAIRS

The L. Douglas Wilder School of Government and Public Affairs is a creative, interdisciplinary grouping of programs in the social sciences and professional arenas that provides students with the knowledge, skills and experience necessary for success in public service.

The Wilder School brings together faculty from multiple disciplines that share a common interest in public affairs. The faculty includes individuals with strong research and analytical skills and with substantive expertise in fields such as criminal justice, economics, homeland security, public administration, urban planning and community development. These faculty members are committed to producing cutting-edge research and public service that can bridge the gap between theory and practice and to providing high quality, innovative and nationally competitive degree programs for students.

To achieve this mission, the Wilder School actively fosters and promotes a wide range of endeavors, including the establishment of interdisciplinary undergraduate and graduate programs that develop close ties with other related university programs. The Wilder School is an intellectually exciting place committed to having a genuine impact on public policy and providing an intellectually stimulating education for future public affairs professionals who share in school's commitment.

Administration

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Shajuana Isom-Payne
Assistant dean of student services

Nicholas Garcia
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Amy Cook, Ph.D.
Associate professor and program chair, criminal justice program

Myung Jin, Ph.D.
Associate professor and program chair, M.P.A. program

Maureen Moslow-Benway

Assistant professor and program chair, homeland security and emergency preparedness program

Xueming (Jimmy) Chen, Ph.D.
Professor and program chair, urban and regional studies program

Accreditation

Public administration (master's degree)

National Association of Schools of Public Affairs and Administration

Urban and regional planning (master's degree)

Planning Accreditation Board

Program offerings

The school offers a variety of educational opportunities. Students may pursue three undergraduate programs and an additional three minors. Graduate programs provide options for full-time students and for practicing professionals interested in enhancing their skills or engaging in graduate-level work on a part-time basis. Current graduate offerings include nationally recognized master's programs and eight graduate-level certificates, as well as a doctoral degree program. Wilder School programs include:

Baccalaureate degrees

Bachelor of Science in Criminal Justice
Bachelor of Arts in Homeland Security and Emergency Preparedness
Bachelor of Science in Urban and Regional Studies

Minors

Criminal justice
Homeland security and emergency preparedness
Urban and regional studies

Graduate certificates

Certificate in Criminal Justice
Certificate in Gender Violence Intervention
Certificate in Geographic Information Systems
Certificate in Homeland Security and Emergency Preparedness
Certificate in Nonprofit Management
Certificate in Public Management
Certificate in Sustainability Planning
Certificate in Urban Revitalization

Master's degrees

Master of Arts in Homeland Security and Emergency Preparedness
Master of Public Administration
Master of Science in Criminal Justice
Master of Urban and Regional Planning

Doctoral degree

Ph.D. in Public Policy and Administration

The school also offers two dual degree programs with the University of Richmond's T.C. Williams Law School. Through these programs students can simultaneously obtain a law degree (J.D.) and either the Master of Public Administration or the Master of Urban and Regional Planning.

Service-learning and internship opportunities

Shajuana Isom-Payne

Assistant dean of student services

The educational experience at the L. Douglas Wilder School of Government and Public Affairs extends far beyond the classroom. Many students take advantage of service-learning (<http://www.wilder.vcu.edu/service/servicelearning/>) and internship (<https://wilder.vcu.edu/students/student-success/internships/>) opportunities, gaining valuable work experience and enhancing their resumes as they contribute in meaningful ways to governmental departments and agencies, legislative offices, nonprofit institutions, community initiatives, and businesses throughout Richmond.

Exceptionally qualified graduate students in the criminal justice, homeland security and emergency preparedness, public administration, and urban and regional planning programs are selected to be Wilder Graduate Scholars (<https://wilder.vcu.edu/students/student-success/graduate-fellowship/>) who undertake yearlong placements in which they benefit from professional work experience and financial support.

At the Wilder School, service is a tradition that is supported and cultivated by a faculty that reflects a tremendous commitment to community-based research. Each semester, VCU faculty offer a diverse selection of credit-bearing service-learning courses that provide students with the privilege of developing hands-on experience within their academic fields while engaging in meaningful projects that benefit local communities.

Guidelines for internships (<https://wilder.vcu.edu/students/student-success/internships/>) are available on the Wilder School website.

Undergraduate information

General education requirements

To complete the general education requirements for the L. Douglas Wilder School of Government and Public Affairs, students must complete the general education requirements for undergraduate study for the College of Humanities and Sciences (p. 159).

Virginia Capital Semester

Shajuana Isom-Payne

Director of student success

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wilder.vcu.edu/students/student-success/virginia-capitol-semester

(<https://wilder.vcu.edu/students/student-success/virginia-capitol-semester/>)

Virginia Capital Semester offers qualified students from VCU and other universities the opportunity to experience an internship in the state government while continuing their studies on a full-time basis through course work at VCU. Internships are arranged with the legislative and executive branches of Virginia government and with the advocacy and lobbying organizations associated with the state government. The program is offered in the spring semester and begins the first week

of January, corresponding with the calendar of the Virginia General Assembly.

The select group of students participating in the program will assemble weekly in a policy-making seminar, GVPA 423, to hear from key leaders at the Capitol and to compare experiences from their various internship placements. Students will receive three credits for the seminar, and three credits and a \$1,000 stipend for GVPA 494, the internship. Both courses are required of all students in the Virginia Capital Semester. Additional related courses taken from the VCU curriculum are recommended. Given the demands of the internship, however, students should not exceed a total of 15 credit hours during the Virginia Capital Semester. The program is designed for full-time students, but if space is available, students who do not wish to take a full course load may be allowed to enroll in the internship and policy-making seminar for six credits.

The program is open to all undergraduate students from accredited colleges and universities, both public and private, including those from colleges and universities in other states. Virginia Capital Semester also is open to graduate students on a case-by-case basis. Acceptance into the program is competitive. Program participants are selected by a committee comprised of faculty members and state officials, with preference given to full-time students who will have advanced sophomore, junior or senior standing at the time of enrollment in the program. Contact information, application procedures and deadlines are available on the Virginia Capital Semester website (<https://wilder.vcu.edu/students/student-success/virginia-capitol-semester/>).

Criminal Justice Scholars

Kristine Artello, J.D., Ph.D., M.S.S.A.

Assistant professor

Undergraduate criminal justice majors who are planning to attend a graduate or professional school are encouraged to participate in the Criminal Justice Scholars program. This is an opportunity to work closely with a criminal justice faculty member to complete a research project and present the results to the faculty with the additional potential to write a journal article. To be considered, a student must have obtained junior status. Transfer students must be juniors and must have completed at least 18 hours of undergraduate work at VCU. All applicants must have a minimum cumulative GPA of 3.25 or a minimum 3.5 in the major and must have earned a minimum grade of B in both CRJS 380 and STAT 210.

Applicants must meet with the Criminal Justice Scholars program coordinator prior to applying to the program to verify eligibility and discuss project ideas. Students should submit an application to the program coordinator by March 1 (for fall consideration) or Sept. 15 (for spring consideration). Once approved, students may enroll in CRJS 492 or GVPA 495 to facilitate the project.

The application, approximately two- to three-pages long, should include:

- A well-defined topic
- A clearly stated research question (or questions)
- A plan for obtaining relevant data in a timely manner (either through original data collection or an existing data set)
- A bibliography of at least 15 relevant academic sources
- A realistic timeline for completion of all tasks
- A list of criminal justice faculty members with whom the student wishes to work

Applications will be evaluated by a faculty committee based upon the criteria listed above. Acceptance into the Criminal Justice Scholars program is contingent upon a faculty member's agreement to supervise the project and their assessment of the project's feasibility.

Upon successful completion of the project, students will have "Criminal Justice Scholar" placed on their transcripts in recognition of their efforts and outstanding work.

Wilder School Scholars

Nicholas Garcia

Director of undergraduate studies

Students in any Wilder School undergraduate major may apply for Wilder School Scholar status upon completion of their freshman year. Students must have a minimum 3.5 cumulative GPA or a 3.75 GPA in their major to be eligible to become Wilder School Scholars. Students must maintain this average in order to continue their Wilder School Scholar status. Transfer students must meet these same requirements after a minimum of one semester of VCU course work.

In order to graduate as Wilder School Scholars, students must:

- Maintain the GPA cited above
- Complete GVPA 499, a three-credit Wilder School Scholars capstone course or an honors thesis through the Wilder School Undergraduate Research Opportunities Program
- Complete at least 15 additional credits in Wilder School honors courses/variants/modules, with at least three of those credits completed each academic year, and at least three of those credits in an honors course outside the student's major (but within the Wilder School)
- Attend at least three Wilder School events or seminars per academic year

The Wilder School offers an array of honors courses each semester. With the exception of GVPA 499, which is limited in enrollment to Wilder School students, these courses are open to students from all majors, since they are offered in conjunctions with the Honors College. Wilder School honors course offerings will include:

- At least once per year, GVPA 499. The exact structure and content varies from year to year. The course will focus on a topic of broad interest to all Wilder School students and disciplines (violence, equity, justice, etc.)
- At least two three-credit honors courses each year
- At least two honors sections of existing courses each year (generally these are sections of large, introductory-level courses)
- At least two honors variants in selected courses each year in which a student may receive honors credit while enrolled in a non-honors course by fulfilling additional requirements, including more advanced readings; extra meetings with the professor and other honors students enrolled in the course; group projects with other honors variant students; or other activities as deemed appropriate by the instructor (These honors variants are distinguished by a separate section number and a title indicating honors status. Limits may be placed on the number of honors variant students in any single course.)
- At least four 1.5-credit honors modules each year

The Wilder School Scholars program is explicitly linked to the VCU Honors College. Students within the Wilder School may graduate

with any one, or all, of three distinct levels of honors: honors in their individual majors (where available), Wilder School Scholar honors and University Honors. Students who graduate as Wilder School Scholars are designated as such at their graduation ceremonies, with a separate certificate, sash and other forms of recognition.

Students who wish to enter the Wilder School Scholars program or who seek additional information should contact the Wilder School Scholars director. Honors courses for each semester are listed in the Schedule of Classes.

Undergraduate Research Opportunities Program (UROP)

Blythe A. Bowman, Ph.D.

Associate professor

The Undergraduate Research Opportunities Program cultivates and supports research partnerships between Wilder School undergraduates and faculty. The UROP offers students the chance to work on cutting-edge research, whether they join established research projects or pursue their own ideas. As UROP participants, undergraduates are involved in each phase of standard research activity: developing research plans, writing proposals, conducting research, analyzing data and presenting research results in oral and written form. UROP projects take place during the academic year, as well as over the summer, and research can be done in any of the Wilder School's academic programs. Projects can last for an entire semester or may continue for a year or more. For their projects UROP students receive academic credit or pay, or work on a voluntary basis. The UROP experience enables students to become familiar with the faculty, learn about potential majors and investigate areas of interest. UROP participants gain practical skills and knowledge they eventually apply to careers after graduation or as graduate students. Most importantly, they become involved in exciting research.

Essential to all UROP projects are the following:

- Research work worthy of academic credit, regardless of whether or not credit is requested
- Active communication between the UROP participant and a faculty supervisor, who is responsible for guiding the intellectual course of the student's work
- A research proposal: a student-authored statement of purpose that describes the planned research
- Completing a UROP experience to present through oral presentation, poster or video (strongly encouraged)
- Enrollment in GVPA 495, a three-credit course, which can be counted one time toward any of the Wilder School's undergraduate majors (Students can take a total of six GVPA 495 credits during their undergraduate careers, but only three of those credits can count toward their major fields. Any additional GVPA 495 credits will count as upper-level electives.)

Each semester/year, the Wilder School will provide several grants of up to \$400 each to support UROP projects.

Eligibility and procedures

Students in any undergraduate major in the Wilder School who have a minimum cumulative overall GPA of 3.25, or a 3.5 GPA in their major, are eligible to participate in the UROP. Students also must have completed the UNIV 200 and research methods courses, with a minimum grade of B in each course in order to be eligible to participate in the program.

As a rule, freshmen are not eligible for the program, and it is strongly recommended that sophomores wait until their junior or senior year to apply for a UROP experience. Each year, however, a small number of incoming freshmen with outstanding potential may be identified as eligible for early participation in the UROP; the GPA requirement and course prerequisites are waived for these freshman participants.

Students wishing to enter the UROP or seeking additional information should contact the Wilder School UROP director.

Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation

Amy Cook, Ph.D.

Associate professor and program chair

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, forensic crime scene investigation, public service and other helping professions, and/or prepare them to pursue studies in law and other related graduate programs. Career opportunities are available in federal, state, local and private justice-related endeavors. These careers include law enforcement, crime scene investigation, juvenile justice, corrections and the courts.

This program also prepares students to enter law school or to pursue graduate studies in criminal justice or in several of the human services fields, usually related to justice. This program offers and encourages in-service justice employees and others to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest and various skill courses designed to enhance their career opportunities. Through core courses and electives in the major, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of an adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complementary courses in other disciplines that can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, crime scene investigation, legal studies, juvenile justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

This concentration is offered for those students who are interested in careers in crime scene investigation at the local, state or federal levels.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Identify concepts and issues that are relevant and/or appropriate (research/content)
- Demonstrate logical connections in concepts, facts and information identified in the literature
- Gather and synthesize knowledge pertaining to a criminal justice or criminological issue

Special requirements

The Bachelor of Science in Criminal Justice requires a minimum of 120 credits, including 39 credits in criminal justice courses, a minimum of 75 credits in courses outside of VCU-offered criminal justice courses, and a minimum cumulative and major GPA of a 2.0. No more than half of the criminal justice courses applied to the major can be transferred from another college. Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. The criminal justice curriculum includes the core and concentration requirements.

Degree requirements for Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 380	Research Methods in Criminal Justice	3
CRJS 475	Criminal Procedure	3
CRJS 480	Senior Seminar	3
• Concentration requirements		
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 425	Violent Crime Scene Investigation	3
• Major electives		
CRJS electives (must be upper-level) ¹		6
Ancillary requirements		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
Open electives		
Select any courses.		48
Total Hours		120

1

May include six credits selected from HSEP 301, HSEP 302, HSEP 320 and HSEP 330

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
CRJS 181	Introduction to Criminal Justice	3
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
MATH 131	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts toward open electives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select BOK for social/behavioral sciences)		3
Term Hours:		16

Spring semester

CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select BOK for humanities/fine arts)		3
Term Hours:		15

Sophomore year**Fall semester**

CRJS 355	Criminological Theory	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education courses		6
Open elective		3
Term Hours:		15

Spring semester

CRJS 320	Principles of Criminal Investigation	3
General education course (select BOK for natural sciences)		3
General education course (select remaining AOI)		3
Open electives		6
Term Hours:		15

Junior year**Fall semester**

CRJS 370	Criminalistics and Crime Analysis	3
CRJS 380	Research Methods in Criminal Justice	3
Open electives		9
Term Hours:		15

Spring semester

CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS elective (must be upper-level)		3

Open electives	9
Term Hours:	15

Senior year**Fall semester**

CRJS 425	Violent Crime Scene Investigation	3
CRJS 475	Criminal Procedure	3
Open electives	9	
Term Hours:		15

Spring semester

CRJS 480	Senior Seminar	3
CRJS elective (must be upper-level)		3
Open electives	8	
Term Hours:		14
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Criminal Justice in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are prepared for effective careers in criminal justice, forensic crime scene investigation, public service and other related professions by broadening and refining their understanding of criminal justice and criminological issues. Students learn to critically analyze criminal justice and criminological research, discuss criminal justice issues and policies using evidence from empirical studies, and frame major issues related to the field in diverse sociocultural contexts.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including CRJS 355 and CRJS 380, an overall minimum GPA of 3.5 and a minimum GPA of 3.5 in criminal justice course work. Successful applicants would enter the program in the semester following completion of their 90th credit hour.

Candidates should submit applications for admission during the semester they would be completing their 90th credit, but no later than April 1 of that year. One of the required reference letters must be from a criminal justice faculty member. Undergraduate students who are interested in the accelerated program should consult with the Wilder School Graduate Student Services and Advising Office to determine their eligibility for the graduate-level courses available to them.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Students who do not maintain a 3.0 GPA in the graduate-level classes will no longer be eligible for the accelerated program and may not take any additional graduate-level classes while pursuing the bachelor's degree. Students will not begin their first semester of only graduate courses until the bachelor's degree has been conferred. Guidance to students admitted

to the accelerated program is provided by both the Wilder School undergraduate academic advisor and the senior academic adviser from Graduate Student Services and Advising.

Degree requirements

The Bachelor of Science in Criminal Justice degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for the upper-level electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate criminal justice courses that may be taken as an undergraduate, once a student is admitted to the program, are a choice of two of the following:

Course	Title	Hours
CRJS 501	Principles of Criminal Justice	3
CRJS 550	Professional Ethics and Liability	3
CRJS 620	Seminar in Criminology	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CRJS 380	Research Methods in Criminal Justice	3
	Criminal justice elective (upper-level)	3
	Open electives	9
	Term Hours:	15
Spring semester		
CRJS 475	Criminal Procedure	3
	Criminal justice elective (upper-level)	3
	Open electives	9
	Term Hours:	15
Senior year		
Fall semester		
CRJS 480	Senior Seminar	3
CRJS 501	Principles of Criminal Justice	3
	or CRJS 550 Professional Ethics and Liability	
	or CRJS 620 Seminar in Criminology	
	Electives	9
	Term Hours:	15
Spring semester		
CRJS 501	Principles of Criminal Justice	3
	or CRJS 550 Professional Ethics and Liability	
	or CRJS 620 Seminar in Criminology	
	Electives	12
	Term Hours:	15

Fifth year		
Fall semester		
CRJS 617	Law and Criminal Justice Policy	3
CRJS 623	Research Methods for Government and Public Affairs	3
	Graduate criminal justice electives	6
	Term Hours:	12
Spring semester		
CRJS 690	Criminal Justice Policy Analysis	3
	Graduate criminal justice electives	9
	Term Hours:	12

Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice

Amy Cook, Ph.D.

Associate professor and program chair

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, forensic crime scene investigation, public service and other helping professions, and/or prepare them to pursue studies in law and other related graduate programs. Career opportunities are available in federal, state, local and private justice-related endeavors. These careers include law enforcement, crime scene investigation, juvenile justice, corrections and the courts.

This program also prepares students to enter law school or to pursue graduate studies in criminal justice or in several of the human services fields, usually related to justice. This program offers and encourages in-service justice employees and others to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest and various skill courses designed to enhance their career opportunities. Through core courses and electives in the major, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of an adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complementary courses in other disciplines that can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, crime scene investigation, legal studies, juvenile justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

The justice concentration is offered for those students who are interested in a broad theoretical and practical education in the field of criminal justice.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- Identify concepts and issues that are relevant and/or appropriate (research/content)
- Demonstrate logical connections in concepts, facts and information identified in the literature

- Gather and synthesize knowledge pertaining to a criminal justice or criminological issue

Special requirements

The Bachelor of Science in Criminal Justice requires a minimum of 120 credits, including 39 credits in criminal justice courses a minimum of 75 credits in courses outside of VCU-offered criminal justice, and a minimum cumulative and major area GPA of a 2.0. No more than half of the criminal justice courses applied to the major can be transferred from another college. Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. The criminal justice curriculum includes the core and concentration requirements.

Degree requirements for Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 380	Research Methods in Criminal Justice	3
CRJS 475	Criminal Procedure	3
CRJS 480	Senior Seminar	3
• Major electives		
CRJS courses (must be upper-level) ¹		18
Ancillary requirements		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
Open electives		
Select any courses		48
Total Hours		120

¹

May include up to 12 credits selected from HSEP 301, HSEP 302, HSEP 320 and HSEP 330

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
CRJS 181 Introduction to Criminal Justice	3
GVPA 100 Making Policy Real: Social Problems and Policy Solutions	3

MATH 131	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts toward open electives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select BOK for social and behavioral sciences)		3

Term Hours: 16

Spring semester

CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (select BOK for humanities/fine arts)		3

Term Hours: 15

Sophomore year

Fall semester

CRJS 355	Criminological Theory	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education courses		6
Open elective		3

Term Hours: 15

Spring semester

CRJS elective (must be upper-level)		3
General education course (select BOK for natural sciences)		3
General education course (select remaining AOI)		3
Open electives		6

Term Hours: 15

Junior year

Fall semester

CRJS 380	Research Methods in Criminal Justice	3
CRJS elective (must be upper-level)		3
Open electives		9

Term Hours: 15

Spring semester

CRJS electives (must be upper-level)		6
Open electives		9

Term Hours: 15

Senior year

Fall semester

CRJS 475	Criminal Procedure	3
CRJS elective (must be upper-level)		3

Open electives	9
Term Hours:	15
Spring semester	
CRJS 480 Senior Seminar	3
CRJS elective (must be upper-level)	3
Open electives	8
Term Hours:	14
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Criminal Justice in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to six hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees are prepared for effective careers in criminal justice, forensic crime scene investigation, public service and other related professions by broadening and refining their understanding of criminal justice and criminological issues. Students learn to critically analyze criminal justice and criminological research, discuss criminal justice issues and policies using evidence from empirical studies, and frame major issues related to the field in diverse sociocultural contexts.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours including CRJS 355 and CRJS 380, an overall minimum GPA of 3.5 and a minimum GPA of 3.5 in criminal justice course work. Successful applicants would enter the program in the semester following completion of their 90th credit hour.

Candidates should submit applications for admission during the semester they would be completing their 90th credit, but no later than April 1 of that year. One of the required reference letters must be from a criminal justice faculty member. Undergraduate students who are interested in the accelerated program should consult with the Wilder School Graduate Student Services and Advising Office to determine their eligibility for the graduate-level courses available to them.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Students who do not maintain a 3.0 GPA in the graduate-level classes will no longer be eligible for the accelerated program and may not take any additional graduate-level classes while pursuing the bachelor's degree. Students will not begin their first semester of only graduate courses until the bachelor's degree has been conferred. Guidance to students admitted to the accelerated program is provided by both the Wilder School undergraduate academic advisor and the senior academic adviser from Graduate Student Services and Advising.

Degree requirements

The Bachelor of Science in Criminal Justice degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion

of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of six graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits substitute for the upper-level electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate criminal justice courses that may be taken as an undergraduate, once a student is admitted to the program, are a choice of two of the following:

Course	Title	Hours
CRJS 501	Principles of Criminal Justice	3
CRJS 550	Professional Ethics and Liability	3
CRJS 620	Seminar in Criminology	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
CRJS 380	Research Methods in Criminal Justice	3
	Criminal justice elective (upper-level)	3
	Open electives	9
Term Hours:		15
Spring semester		
CRJS 475	Criminal Procedure	3
	Criminal justice elective (upper-level)	3
	Open electives	9
Term Hours:		15
Senior year		
Fall semester		
CRJS 480	Senior Seminar	3
CRJS 501	Principles of Criminal Justice	3
	or CRJS 550 Professional Ethics and Liability	
	or CRJS 620 Seminar in Criminology	
Electives		9
Term Hours:		15
Spring semester		
CRJS 501	Principles of Criminal Justice	3
	or CRJS 550 Professional Ethics and Liability	
	or CRJS 620 Seminar in Criminology	
Electives		12
Term Hours:		15
Fifth year		
Fall semester		
CRJS 617	Law and Criminal Justice Policy	3
CRJS 623	Research Methods for Government and Public Affairs	3
Graduate criminal justice electives		6
Term Hours:		12

Spring semester		
CRJS 690	Criminal Justice Policy Analysis	3
Graduate criminal justice electives		9
Term Hours:		12

Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.)

Maureen Moslow-Benway

Assistant professor and program chair

Emergency preparedness has always been a critical aspect of governmental policy at the federal, state and local levels. Response to natural disasters – floods, hurricanes, tornadoes, earthquakes, outbreak of infectious disease – requires pre-disaster planning, mid-disaster operations and postdisaster reconstruction that can only be carried out successfully through a partnership between all levels of government and between the public sector, private sector and civil society. Since the Sept. 11, 2001 attacks in New York, Virginia and Pennsylvania the concept of emergency preparedness has been expanded to include the task of homeland security – protecting the U.S. from terrorist-caused disasters. Policy planners and operational responders at all levels of government who had previously focused upon natural disasters now have the added responsibility of preparing for and mitigating the effects of politically inspired terrorist violence.

The program in homeland security and emergency preparedness recognizes this dual nature and is designed to give students both theoretical and practical knowledge that will prepare them for the following: 1) private- or public-sector employment in the expanding area of homeland security as it relates specifically to international and domestic security, as well as emergency preparedness for both security and nonsecurity-related incidents and/or 2) further study in government, international affairs, law enforcement, policy planning or law.

Students will study homeland security and emergency preparedness from a number of perspectives: emergency planning/management principles and practicalities; the nature and effects of natural disasters; the nature of the terrorist threat to the U.S. from both foreign and domestic organizations, including terrorist motives, methods and history; counterterrorism policies ranging from law enforcement to intelligence to the use of military force; vulnerability assessment of public and private infrastructure and institutions; critical infrastructure protection; ethical, constitutional, law enforcement and civil liberties issues related to the prevention of terrorist attacks through surveillance, immigration restrictions and detention; public safety legal questions that arise during governmental responses to natural disaster; intelligence analysis of domestic and international threats; and policy-making topics, such as organizational design and management, interagency processes, and intergovernmental coordination and cooperation within emergency preparedness and counterterrorism institutions at the local, state, federal and international level.

The knowledge and skills acquired through this course of study will enable students to continue their studies at law school or graduate school in a number of areas: business, criminal justice, geography, international affairs, political science, public administration, sociology and urban planning. Students also will be able to pursue employment opportunities in various fields, such as within the government at the local, state and federal level in homeland security and emergency planning/response; law enforcement; intelligence; for-profit and nonprofit research

and consultancy; and private sector employment with any business that requires emergency planning expertise to protect critical infrastructure.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Analytical concepts and skills**
Students will achieve comprehension of the theory and practice of homeland security and emergency preparedness and be able to analyze policy and synthesize information in four key areas: risk and vulnerability analysis, strategic planning dilemmas of disasters and disaster preparedness, institutional coordination and intelligence operations, and legal/constitutional aspects.
- **Homeland security and emergency preparedness**
Students will achieve comprehension of the theoretical and practical principles of emergency preparedness for both natural disasters and terrorist incidents and be able to analyze key topics related to natural disasters, emergency planning, terrorism and counterterrorism, intelligence, and cybersecurity.
- **Research and policy analysis**
Students will perform research, policy analysis and risk assessment using several methodological and theoretical approaches to homeland security and emergency preparedness.
- **Knowledge of government**
Students will demonstrate a basic knowledge of the workings of the American government and the international system.
- **Oral and written presentation**
Students will develop advanced skills in expository writing and oral presentation.
- **Evaluation**
Students will be able to evaluate scholarly and practitioner analyses of homeland security and emergency preparedness topics.

Special requirements

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. To graduate from the homeland security and emergency preparedness program, students must have a cumulative and major GPA of 2.0. The homeland security and emergency preparedness curriculum includes the core and major elective requirements.

Degree requirements for Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
HSEP 301/POLI 367	Terrorism	3
HSEP 302	Emergency Planning and Incident Management	3
HSEP 310	Risk and Vulnerability Assessment	3
HSEP 314	Cybersecurity Policy	3

HSEP 320	The Intelligence Community and the Intelligence Process	3
HSEP 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
HSEP 490	Senior Seminar	3
• Major electives		
Select any 300- or 400-level HSEP course and/or courses from the list of approved electives below.		9
Ancillary requirements		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
Open electives		
Select any course.		57
Total Hours		120

The minimum number of credit hours required for this degree is 120.

Approved homeland security and emergency preparedness electives

Course	Title	Hours
CRJS 300	Forensic Criminology	3
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 463	Crime and Justice in Global Perspective	3
CRJS 475	Criminal Procedure	3
FIRE 306	Regulatory Aspects of Safety and Risk Control	3
FIRE 307	System Safety	3
FIRE 308	Incident Investigation and Analysis	3
FIRE 309	Risk Management and Insurance	3
FIRE 359	Issues in Risk Management and Insurance	3
GVPA 493	Government and Public Affairs Internship	1-6
POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI/INTL 351	Governments and Politics of the Middle East	3
POLI/INTL 353	Latin American Governments and Politics	3
POLI/INTL 362	International Organizations and Institutions	3
POLI/INTL 363	U.S. Foreign Policy	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP/ENVS 332	Environmental Management	3
URSP 413	Policy Implementation	3

URSP/ENVS 521	Introduction to Geographic Information Systems	3
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What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
MATH 131	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts toward open electives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (HSEP 101 is suggested; satisfies AOI for diversities in the human experience)		3
General education course (POLI 103 is suggested; satisfies BOK for social/behavioral sciences)		3
Open elective		3
Term Hours:		16

Spring semester		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course (POLI 105 is suggested; satisfies AOI for global perspectives)		3
General education course (select BOK for natural sciences)		3
Term Hours:		15

Sophomore year		
Fall semester		
HSEP 301/ POLI 367	Terrorism	3
HSEP 302	Emergency Planning and Incident Management	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course (select BOK for humanities/fine arts)		3
General education course (select remaining AOI)		3
Term Hours:		15

Spring semester		
HSEP 310	Risk and Vulnerability Assessment	3
Open electives		12
Term Hours:		15

Junior year

Fall semester

HSEP 314	Cybersecurity Policy	3
HSEP 320	The Intelligence Community and the Intelligence Process	3
Open electives		8
Term Hours:		14

Spring semester

Homeland security and emergency preparedness electives		6
Open electives		9
Term Hours:		15

Senior year**Fall semester**

HSEP 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
Homeland security and emergency preparedness electives		3
Open electives		9
Term Hours:		15

Spring semester

HSEP 490	Senior Seminar	3
Open electives		12
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Urban and Regional Studies, Bachelor of Science (B.S.)

Xueming (Jimmy) Chen, Ph.D.
Professor and program chair

The Bachelor of Science in Urban and Regional Studies requires 120 credits, including 40 credits within the major. The program is designed so that students may enter as late as their junior year and provides a solid foundation for professional work or advanced study aimed at addressing some of the most important challenges and issues facing the U.S. and other world regions, such as urban sprawl, economic marginalization, ethnic and racial conflict and environmental degradation. The program covers a wide range of topics related to these issues, including transportation, housing, land use, environmental management, regional and international development, human-environment interaction, globalization and socioeconomic change. Students can focus on the subject matter of their interest by choosing to concentrate in either urban planning and policy or regional analysis and development; alternatively they may opt for a generalized course of study. Nine core courses and a lab (28 credits total) are required for all majors. These courses provide fundamental background knowledge in an array of disciplines that form the foundations of urban and regional studies, such as urban planning and design, human and physical geography, economics, environmental management, urban and public policy, and geographic information systems. Students complete their remaining 12 credits within one of the two concentrations or through a generalized course of study.

The program helps develop a theoretical and methodological background as well as analytical skills that can be used to address a wide range of issues and problems. Students acquire marketable skills in qualitative and quantitative analysis, computer usage, problem solving and

communication — as well as a broad perspective on environment and society — that are essential for many occupations.

The generalized course of study option is designed for those students who have a broad interest in urban and regional studies. They can tailor this course of study to match not only intellectual interests but anticipated career goals. Students complete the core courses and then select the remaining 12 credits from any of the non-core courses listed below.

Student learning outcomes

Upon completing this program, students will have acquired the following.

A multidisciplinary understanding of urban and regional dynamics and planning

Students will develop a multidisciplinary understanding of the characteristics of cities and other regions, the factors that shape them over time and the role of planning in influencing socioeconomic and environmental conditions therein. Among the key topics covered are:

- The urbanization process in the United States
- Urbanization and regional change in other cultures and historically
- Urban design and the built environment
- Economic geography
- Urban and regional demographics and sociology
- The relationship between the natural environment and urbanization and other land use change
- Local and regional politics
- The role of planning tools and strategies in addressing urban and regional problems, such as poverty, congestion and environmental degradation

Mastery of general and major-specific skills

Students will acquire the skills needed to function as well-rounded, educated citizens, including those required for careers or advanced study in urban and regional analysis, planning and community development. These include:

- Oral, written and graphic communication
- Social science and planning methods, including quantitative and qualitative analysis
- Research using government documents and other library sources
- Cause and effect reasoning
- Organized presentation of ideas
- Critical and independent thinking
- Computer proficiency
- The ability to work in groups
- Analysis of maps and other spatial data

Ethics and a sense of social and personal responsibility

Students will develop a strong ethical foundation and a sense of social and personal responsibility rooted in an understanding of and sensitivity to:

- The complex notions of the public good
- The potential social costs and other externalities of regional and economic change
- Human needs and requirements for becoming a more humane and egalitarian society

- The ethical dimensions of social conflict and ways in which it can be addressed
- Diverse cultural and class perspectives
- The ethical standards of professional behavior

Special requirements

Proof of competency with Excel software is a prerequisite for URSP 306; URSP 116 is a prerequisite for URSP 310; URSP 204 (or permission of instructor) is a prerequisite for URSP 332/ENVS 332; URSP 310 is a prerequisite for URSP 428; URSP 310, URSP 313 and senior standing are prerequisites for URSP 440; and URSP 102 and URSP 306 are prerequisites for URSP 502.

Degree requirements for Urban and Regional Studies, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
URSP 102	Introduction to Human Geography	3
URSP 116	Introduction to the City	3
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	4
URSP 306	Economic Geography	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP/ENVS 332	Environmental Management	3
URSP 360	Community and Regional Analysis and GIS	3
URSP 428	Land Use and Infrastructure Planning	3
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
• Major electives		
Select additional credits from any URSP courses.		9
Ancillary requirements		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
Open electives		
Select any course.		47
Total Hours		120

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		Hours
Fall semester		
MATH 131	Introduction to Contemporary Mathematics (prerequisite for STAT 208; counts toward open electives)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
URSP 102	Introduction to Human Geography	3
General education course (select BOK for social/behavioral sciences)		3
Open elective		3
Term Hours:		16
Spring semester		
GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
URSP 116	Introduction to the City	3
General education course (select BOK for humanities/fine arts)		3
General education course (select BOK for natural sciences)		3
Term Hours:		15
Sophomore year		
Fall semester		
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
URSP 204 & URSZ 204	Physical Geography and Physical Geography Laboratory	4
General education course (URSP 350 is suggested; satisfies AOI for global perspectives)		3
General education course		3
Term Hours:		16
Spring semester		
URSP 306	Economic Geography	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP major elective		3
General education course (select remaining AOI)		3
Open elective		3
Term Hours:		15
Junior year		
Fall semester		
URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP major elective		3

Open electives	9
Term Hours:	15
Spring semester	
URSP/ENVS 332 Environmental Management	3
URSP major elective	3
Open electives	9
Term Hours:	15
Senior year	
Fall semester	
URSP 360 Community and Regional Analysis and GIS	3
URSP 428 Land Use and Infrastructure Planning	3
Open electives	10
Term Hours:	16
Spring semester	
URSP 440 Senior Capstone Seminar in Urban and Regional Studies	3
Open electives	9
Term Hours:	12
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Criminal justice, minor in

The criminal justice minor is offered for those students who are interested in a theoretical and practical education in the field of criminal justice. A minor in criminal justice requires a minimum of 18 credits. To complete the minor, students must complete each of the following courses:

Course	Title	Hours
CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 475	Criminal Procedure	3
Select one additional 300- or 400-level criminal justice elective		3
Total Hours		18

Please note that CRJS 181 is a prerequisite for all required minor courses and that CRJS 492 and GVPA 493 are not available to those minoring in criminal justice.

Homeland security and emergency preparedness, minor in

A minor in homeland security and emergency preparedness consists of 18 credits. Students are required to take the following:

Course	Title	Hours
HSEP 101	Homeland Security and Emergency Preparedness	3
HSEP 301/POLI 367	Terrorism	3
HSEP 302	Emergency Planning and Incident Management	3

HSEP 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
Select one the following:		3
HSEP 310	Risk and Vulnerability Assessment	
HSEP 311	Strategic Planning for Homeland Security and Emergency Preparedness	
HSEP 320	The Intelligence Community and the Intelligence Process	
Select three additional elective credits from the HSEP electives list below in consultation with an adviser ¹		3
Total Hours		18

¹

Students also may choose these credits from whichever HSEP core courses they have not already taken.

Approved homeland security and emergency preparedness electives

Course	Title	Hours
CRJS 300	Forensic Criminology	3
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 463	Comparative Criminal Justice Systems	3
CRJS 475	Criminal Procedure	3
FIRE 306	Regulatory Aspects of Safety and Risk Control	3
FIRE 307	System Safety	3
FIRE 308	Incident Investigation and Analysis	3
FIRE 309	Risk and Insurance	3
FIRE 359	Issues in Risk Management and Insurance	3
GVPA 493	Government and Public Affairs Internship	1-6
HSEP 391	Topics in Homeland Security and Emergency Preparedness	3
HSEP 491	Advanced Topics in Homeland Security and Emergency Preparedness	3
HSEP 492	Independent Study	1-4
POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI/INTL 351	Governments and Politics of the Middle East	3
POLI/INTL 353	Latin American Governments and Politics	3
POLI/INTL 362	International Organizations and Institutions	3
POLI/INTL 363	U.S. Foreign Policy	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP/ENVS 332	Environmental Management	3
URSP 413	Policy Implementation	3

URSP/ENVS 521	Introduction to Geographic Information Systems	3
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Urban and regional studies, minor in

The minor in urban and regional studies requires 18 credits. All students must take the following:

Course	Title	Hours
Select any 100-level URSP class		3
URSP 102	Introduction to Human Geography	3
URSP 204	Physical Geography	3
Select an additional nine credits of electives from any other upper-level (300- or above) URSP courses		9
Total Hours		18

SCHOOL OF MEDICINE

The School of Medicine opened on Nov. 5, 1838, as the medical department of Hampden-Sydney College, and became the Medical College of Virginia in 1854. Full-time clinical faculty members were first appointed in 1928, and improved facilities became available between 1936 and 1941 with the completion of the 600-bed West Hospital, A.D. Williams Clinic and Hunton Hall dormitory, located on the current site of the Main Hospital building. Growth in faculty, students and facilities continued after World War II, leading to the development of today's academic health center.

Hospital facilities on the MCV Campus include both inpatient and outpatient facilities. MCV Hospitals of the VCU Health System is licensed for 902 beds. In addition, the hospital at the McGuire Veterans Affairs Medical Center (600 beds) provides excellent patient care, training and research opportunities for the School of Medicine through its affiliation programs.

In the School of Medicine, advanced degree programs are coordinated through the Office of the Associate Dean for Graduate Education, who acts for the dean of the School of Medicine on all issues related to administration of these programs. Each advanced degree program is represented by a graduate program director. Graduate program directors are appointed either by the chair of the department administering the program or, in the case of interdisciplinary programs, by the associate dean for graduate education in consultation with the chairs of participating departments. Graduate program directors administer all aspects of their programs and represent their programs within and outside of the School of Medicine.

Administration

1201 East Marshall Street
Box 980565
Richmond, Virginia 23298-0565
medschool.vcu.edu (<http://www.medschool.vcu.edu>)

Peter F. Buckley, M.D.
Executive vice president for medical affairs (VCU Health) and dean

Brian Aboff, M.D.
Senior associate dean for graduate medical education

Jean Bailey, Ph.D.
Assistant dean for faculty development

Julie Beales, M.D.
Associate dean for veterans affairs

Diane Biskobing, M.D.
Associate dean for preclinical medical education

Lelia Brinegar, Ed.D.
Assistant dean for medical education

Pemra Cetin, M.B.A.
Assistant dean for student affairs and financial aid

Ralph (Ron) Clark III, M.D.
Associate dean for clinical activities

Susan DiGiovanni, M.D.

Associate dean for quality improvement and LCME standards

Nicole Deiorio, M.D.
Associate dean for student affairs

Michael S. Donnenberg, M.D.
Senior associate dean for research and research training

Niles Eggleston
Assistant vice president for alumni and development

Mike Grotewiel, Ph.D.
Associate dean for graduate education

Kevin Harris, Ph.D.
Senior associate dean, diversity, equity and inclusion

Ramana Feezer, M.D.
Interim associate dean for patient safety and quality care

Sarah Hobgood, M.D.
Assistant dean for clinical medical education

Donna Jackson, Ed.D.
Assistant dean for admissions

Luann Lawson, M.D.
Senior associate dean for medical education and student affairs

Joy Sanders Malkin
Assistant dean for development and alumni affairs

Anita Navarro, Ed.D.
Chief of staff

Paul Peterson, M.B.A.
Assistant dean for administration

Wies Rafi, M.S.I.T, C.H.C.I.O.
Assistant dean for technology services

Elizabeth Ripley, M.D.
Senior associate dean for faculty affairs

Roxann Roberson-Nay, Ph.D.
Assistant dean for graduate recruitment and admissions

Sally Santen, M.D., Ph.D.
Senior associate dean for assessment and evaluation studies

Michelle Whitehurst-Cook, M.D.
Senior associate dean for admissions

Christopher Woleben, M.D.
Associate dean for student affairs

Cathy Wood, M.B.A.
Senior associate dean for finance and administration

Tom Yackel, M.D., M.P.H.
Senior associate dean for clinical affairs and president, MCV Physicians

Accreditation

Genetic counseling (master's degree)

American Board of Genetic Counseling

Medical physics

Commission on Accreditation of Medical Physics Educational Programs

Medicine (M.D.)

Liaison Committee on Medical Education

Public health (master's degree)

Council on Education in Public Health

Mission statement

The mission of the VCU School of Medicine is to provide pre-eminent education to physicians and scientists in order to improve the quality of health care for humanity. Through innovative, scholarly activity and a diverse educational context, the school seeks to create and apply new knowledge and to provide and continuously improve systems of medical and science education. Furthermore, the mission includes the development of more effective health care practices to address the needs of diverse populations and to provide distinguished leadership in the advancement of medicine and science.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, including undergraduate medical students, advanced-degree (graduate) students and graduate physician house officers, as well as continuing education directed toward the needs of practicing physicians. In the classroom, laboratory, clinic and hospital, the faculty and students are brought together in teaching-learning experiences that promote scientific scholarship and personal growth in knowledge and professional skills applicable to careers in a diverse workplace environment.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of skills in biomedical knowledge, health care leadership and patient care. Therefore, the school shares with teaching the interdependent and almost inseparable objectives of research and service.

The School of Medicine is located on the MCV Campus of VCU.

For comprehensive information on the School of Medicine departments, programs and faculty, please visit the school website (<http://www.medschool.vcu.edu>).

Faculty and facilities

The School of Medicine consists of 700 full-time faculty, including affiliates, assisted by 630 residents and fellows and more than 700 clinical voluntary faculty. Programs of instruction and research are conducted on campus, at the McGuire VA Medical Center and at affiliated hospitals in an effort to expose the students to the variety of clinical disorders encountered in the eastern U.S.

SCHOOL OF NURSING

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then, the educational program has evolved from a basic diploma program to multiple programs at the baccalaureate, master's- and doctoral-degree levels. Additionally, the School of Nursing offers post-master's certificate programs. The School of Nursing takes pride in its long history of service to the profession of nursing and continues to be a leader in nursing education in Virginia.

Administration

1100 East Leigh Street
Box 980567
Richmond, Virginia 23298-0567
(804) 828-0724
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nursing.vcu.edu (<http://www.nursing.vcu.edu>)

Jean Giddens, Ph.D., RN, FAAN
Dean

Pamela Parsons, Ph.D., RN, GNP-BC, FNAP
Clinical associate professor and associate dean for practice and community engagement

Amy Salisbury, Ph.D., RN
Professor and associate dean for research, scholarship and innovation

Megan Rapchick
Assistant dean, Office of Student Success

Christine Wynd, Ph.D., RN
Professor and chair, Department of Family and Community Health Nursing

Shelley Conroy, Ed.D., RN, CNE
Professor and chair, Department of Adult Health and Nursing Systems

Accreditation

The baccalaureate degree in nursing, master's degree in nursing, post-master's certificate program and the Doctor of Nursing Practice program at the VCU School of Nursing are accredited by the Commission on Collegiate Nursing Education (<https://www.aacnursing.org/CCNE/>).

The pre-licensure nursing program is approved by the Virginia Board of Nursing (<http://www.dhp.virginia.gov/nursing/>).

Programs

The School of Nursing offers Bachelor of Science, Master of Science, graduate certificate, post-master's certificate, post-professional certificates, Doctor of Philosophy and Doctor of Nursing Practice programs. Curricula and admissions information pertaining to all of these programs is available on this website and may be accessed using the program index feature at the top of this page.

Further information may be obtained by visiting the School of Nursing website (<http://www.nursing.vcu.edu/>) or by writing to Virginia Commonwealth University, School of Nursing, Office of Student Success, Box 980567, Richmond, VA 23298-0567.

Facilities and resources

The faculty and administrative offices of the school are housed at 1100 E. Leigh St. Additionally, this building has a nursing clinical resource laboratory and classrooms equipped with a full range of audiovisual equipment. Both graduate and undergraduate courses are also scheduled in other classrooms on campus.

The clinical laboratories for nursing courses are conducted at the VCU Medical Center and in numerous other urban and rural hospitals and health agencies in the area, including community medical centers and state hospitals, public health services, private clinics and offices, and federal and state centers and departments. These facilities provide generalized and specialized inpatient and ambulatory services. Students are given a range of diverse experiences in hospital and community-oriented nursing. Selection of specific facilities for student experience is based upon curricular and advanced-practice certification requirements, the educational needs of the individual student and the services available.

Financial assistance

Applications for financial assistance must be filed for all forms of financial assistance. A Free Application for Federal Student Aid may be obtained from the Office of Financial Aid, Virginia Commonwealth University, Richmond, VA 23298-0244 or online at fafsa.ed.gov (<https://fafsa.ed.gov>).

Financial assistance is available through scholarships, fellowships and assistantships administered by the School of Nursing. Additional information may be found on the school's website (<https://nursing.vcu.edu/admission/scholarships-and-financial-aid/>).

Departments

Department of Adult Health and Nursing Systems

Shelley F. Conroy, Ed.D., RN, CNE
Professor and chair

Department of Family and Community Health Nursing

Christine Wynd, Ph.D., RN
Professor and chair

Undergraduate information

Academic regulations

In addition to the information below, the School of Nursing has additional requirements and all new and continuing students are responsible for compliance with all school policies listed in the School of Nursing student resource guide, available in the resources section of the School of Nursing website (<https://nursing.vcu.edu/about-us/resources/>).

Progression

The minimum passing grade in the general education courses and the nursing major is a C/satisfactory, except in anatomy, physiology or microbiology, which must be completed with a minimum grade of B. Any nursing student who receives less than a C/satisfactory grade in any course must repeat the course with a C/satisfactory or better. Courses

at the next level in the nursing major without a clinical component may be taken before students officially progress to that level. Appeal of all progression issues is made to the undergraduate program committee.

If a student earns a grade of C or below in anatomy, physiology or microbiology, the course may be repeated once. If a student earns a grade of D/unsatisfactory or below in any other course, it may be repeated once. If the repeated course or another course is failed with a grade of D/unsatisfactory or below, or C or below in anatomy, physiology or microbiology, the student may not proceed in the nursing major and is dismissed from the School of Nursing.

A student may fail a clinical course prior to the completion of the course under certain circumstances. A student whose conduct is judged to be clinically unsafe may be dismissed at any time from a clinical unit. Unsafe clinical performance is defined as behavior that is actually or potentially injurious to patients or staff and is out of the range of ordinary student mistakes. Dismissal for the remainder of the course results in a failing grade for the course as does any failure to meet course objectives.

Completion of degree requirements – time limit

Once the student enrolls in the School of Nursing, the degree requirements must be completed within six calendar years. The credentials and programs of a candidate unable to meet this requirement may be evaluated by the undergraduate program committee upon request. Such a candidate may have to meet additional requirements established during the interval since matriculation.

Students in the traditional or accelerated-B.S. concentration who are not in continuous enrollment (as defined by university policy) may have to meet additional program/course requirements. The undergraduate program committee will evaluate and determine the student's program of study if readmitted to the program.

Preparatory study for nursing

University Academic Advising provides programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in nursing (p. 65), see the UAA section of this bulletin.

Nursing, Bachelor of Science (B.S.), accelerated program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

- I. Effective therapeutic nursing practice
- II. Nursing judgment
- III. A spirit of inquiry
- IV. Professional identity

Student learning outcomes

The graduate is a knowledgeable professional nurse who will demonstrate:

1. Integration of theories and concepts from liberal education into nursing practice (III)
2. Knowledge, skills and attitudes in leadership, quality improvement and patient safety to provide high quality health care (I, II, IV)
3. Professional nursing practice grounded in the translation of current evidence (I, II, III)
4. Knowledge of skills in information literacy, management and patient care technology (III)
5. Knowledge of health care, financial and regulatory policies that influence the nature and functioning of the health care system (I, II)
6. Effective communication and collaboration skills with the interprofessional team to deliver high quality and safe patient care (I, II, IV)
7. Health promotion and disease prevention at the individual and population level necessary to improve population health (I, II)
8. Professionalism that reflects the inherent values of altruism, autonomy, human dignity, integrity and social justice fundamental to nursing (IV)
9. Competence to practice with patients, including individuals, families, groups, communities and populations across the lifespan and across the continuum of health care environments that respects the variations of care, the increased complexity and the use of health care resources inherent in caring for patients (I, II, III, IV)

Other information

Our international and non-native English-speaking students bring different perspectives and new thinking to our nursing programs. To ensure that all incoming student are prepared for the school's academic rigor, all international applicants and non-native English speaking applicants without a degree from a U.S. high school, college or university must provide additional information with their applications according to the English language proficiency guidelines on the program admission tab.

To be considered for admission to the School of Nursing, applicants must:

1. Be eligible for readmission or be in good standing at the last college or university attended
2. Submit a completed application with all required materials to the School of Nursing.
3. Have an earned bachelor's degree in a field other than nursing from a regionally accredited college or university (This can be outstanding at the time of application but must be completed prior to the start of the program.)
4. Have a minimum cumulative GPA of 2.5 based on a scale of 4.0 on all college course work
5. Present no grades lower than B in anatomy, physiology or microbiology (Lower grades are not accepted for these courses. Anatomy, physiology, and microbiology must be taken within 10 years of enrollment into the nursing program. Grades lower than C in any other required courses are not accepted.)
6. Provide additional information with the application according to the English language proficiency guidelines for applicants who are international or non-native English speakers without a degree from

a U.S. high school, college or university (Additional information can be found on the "Required materials" tab of the VCU International Admissions website (<https://www.vcu.edu/admissions/apply/international/undergraduate-applicants/>).

7. Complete the following prerequisites prior to enrollment:

Course	Title	Hours
BIOL 205	Basic Human Anatomy	4
BIOL 209 & BIOZ 209 or BIOL 303 & BIOZ 303	Medical Microbiology and Medical Microbiology Laboratory Microbiology and Microbiology Laboratory	4-5
BIOL 217	Principles of Nutrition	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304	Life Span Developmental Psychology	3
STAT 208 or STAT 210 or STAT 212	Statistical Thinking Basic Practice of Statistics Concepts of Statistics	3

Refer to the VCU Transfer Center website (<http://www.transfer.vcu.edu/>) for equivalencies at other colleges and universities.

Applicants who have completed a baccalaureate degree in a field other than nursing may also apply for the traditional program (p. 573).

Degree requirements for Nursing, Bachelor of Science (B.S.), accelerated program

Course	Title	Hours
General education (p. 77) ¹		
Major requirements		
• Major core requirements		
NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
NURS 325	Nursing of Adults I	6
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	Pathophysiology and Pharmacology I	3
NURS 366	Pathophysiology and Pharmacology II	3
NURS 403	Evidence-based Practice in Health Care	3
NURS 416	Community Health Nursing	5
NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	3
NURS 498	Senior Synthesis	8
• Additional major requirements		
IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
IPEC 561	IPE Virtual Geriatric Case	2

or IPEC 562 IPE Quality Improvement Project Practicum
or IPEC 563 Interprofessional Complex Care Coordination

Ancillary requirements	
Credits required for admission	55
Total Hours	122

¹

General education requirements are met with previous baccalaureate degree.

The minimum number of credit hours required for this degree is 122.

What follows is a sample plan that meets the post-bachelor's degree prescribed requirements within a five-semester plan of study at VCU. Please contact your adviser before beginning course work toward a degree.

Credits required for admission to program: 55

Sophomore year

Summer semester

NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
Term Hours:		11

Junior year

Fall semester

IPEC 501	Foundations of Interprofessional Practice	1
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 365	Pathophysiology and Pharmacology I	3
Term Hours:		14

Spring semester

IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 325	Nursing of Adults I	6
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 366	Pathophysiology and Pharmacology II	3
NURS 403	Evidence-based Practice in Health Care	3
Term Hours:		18

Summer semester

NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	3
Term Hours:		9

Senior year

Fall semester

IPEC 561	IPE Virtual Geriatric Case	2
or IPEC 562	or IPE Quality Improvement Project Practicum	
or IPEC 563	or Interprofessional Complex Care Coordination	
NURS 416	Community Health Nursing	5
NURS 498	Senior Synthesis	8
Term Hours:		15

Total Hours: 67

The minimum number of credit hours required for this degree is 122.

Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

- I. Effective therapeutic nursing practice
- II. Nursing judgment
- III. A spirit of inquiry
- IV. Professional identity

Student learning outcomes

The graduate is a knowledgeable professional nurse who will demonstrate:

1. Integration of theories and concepts from liberal education into nursing practice (III)
2. Knowledge, skills and attitudes in leadership, quality improvement and patient safety to provide high quality health care (I, II, IV)
3. Professional nursing practice grounded in the translation of current evidence (I, II, III)
4. Knowledge of skills in information literacy, management and patient care technology (III)
5. Knowledge of health care, financial and regulatory policies that influence the nature and functioning of the health care system (I, II)
6. Effective communication and collaboration skills with the interprofessional team to deliver high quality and safe patient care (I, II, IV)
7. Health promotion and disease prevention at the individual and population level necessary to improve population health (I, II)
8. Professionalism that reflects the inherent values of altruism, autonomy, human dignity, integrity and social justice fundamental to nursing (IV)
9. Competence to practice with patients, including individuals, families, groups, communities and populations across the lifespan and across the continuum of health care environments that respects the variations of care, the increased complexity and the use of health care resources inherent in caring for patients (I, II, III, IV)

Other information

Our international and non-native English-speaking students bring different perspectives and new thinking to our nursing programs. To ensure that all incoming student are prepared for the school's academic rigor, all international applicants and non-native English speaking

applicants without a degree from a U.S. high school, college or university must provide additional information with their applications according to the English language proficiency guidelines on the program admission tab.

To be considered for admission to the School of Nursing, applicants must:

1. Be eligible for readmission or be in good standing at the last college or university attended
2. Submit a completed application with all required materials to the School of Nursing
3. Have graduated from a diploma or associate degree program in nursing from a college or university with institutional accreditation
4. Have an R.N. license from a U.S. state or territory at the time of application for admission (Students who do not currently have an R.N. license in the U.S., consult with the Commission on Graduates of Foreign Nursing Schools (<http://www.cgfn.org/>) and the Virginia Board of Nursing (<https://www.dhp.virginia.gov/nursing/>) for steps needed to obtain a Virginia R.N. license.)
5. Provide additional information with the application according to the English language proficiency guidelines for applicants who are international or non-native English speakers without a degree from a U.S. high school, college or university (Additional information can be found on the "Required materials" tab of the VCU International Admissions website (<https://www.vcu.edu/admissions/apply/international/undergraduate-applicants/>).
6. Complete the following general education courses (with minimum grades of C) at an accredited college or university:
 - a. The following courses or their transfer equivalents (14 credit hours) must be completed prior to enrollment:

Course	Title	Hours
BIOL 205	Basic Human Anatomy ¹	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory ¹	4
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

¹

Applicants attending colleges or universities which offer anatomy and physiology as a combined two-semester course must complete the entire course sequence prior to enrolling in the School of Nursing. One semester of a combined anatomy and physiology course will not transfer, nor can one semester of a combined anatomy and physiology course be used in conjunction with a stand-alone anatomy or physiology course to fulfill this requirement. If taking stand-alone anatomy and physiology courses, human or comparative anatomy and human or animal physiology are accepted.

- b. A minimum of 24 credit hours of the following required 37 credits must be completed prior to enrollment. All general education courses must be completed prior to enrolling in the final nursing course:

Course	Title	Hours
BIOL 101 & 101 or BIOL 151 & BIOZ 151	Biological Concepts and Biological Concepts Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 209 & BIOZ 209 or BIOL 303 & BIOZ 303	Medical Microbiology and Medical Microbiology Laboratory ¹ Microbiology and Microbiology Laboratory	4-5
BIOL 217	Principles of Nutrition (or successful completion of the nutrition exam)	3
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 304	Life Span Developmental Psychology	3
SOCY 101 Play course video for Introduction to Sociology or ANTH 103	Introduction to Sociology Introduction to Anthropology	3
STAT 208 or STAT 210 or STAT 212	Statistical Thinking (must be taken prior to NURS 403) Basic Practice of Statistics Concepts of Statistics	3
Additional college-level course work ²		12-14

1

Students may also successfully complete the microbiology NLN exam to satisfy this requirement.

2

Courses must be eligible for transfer to VCU. See the Transfer Center website for course equivalencies (<https://transfer.vcu.edu/prospective/equivalency/>).

If the applicant has a bachelor's degree in another discipline, the University Core Education Curriculum requirements and general education requirements for the R.N.-B.S. completion program will be met with the previous baccalaureate degree, with the exception of the following courses that must be completed prior to enrollment in the final nursing course: anatomy, physiology, microbiology, statistics and developmental psychology.

In addition to the above criteria, highly qualified applicants to the program who meet the following criteria are eligible for guaranteed admission:

- Cumulative GPA of 3.0 on all college courses
- Minimum grade of B in any nursing class

Degree requirements for Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program

Course	Title	Hours
Major requirements		
• Major core requirements		
NURS 301	Nursing Informatics	3
NURS 307	Foundations of Professional Nursing I	3

NURS 308	Foundation of Professional Nursing II	3
NURS 309	Population Health	3
NURS 403	Evidence-based Practice in Health Care	3
NURS 406	Interprofessional Collaborative Practice	2
NURS 408	Ethics, Law and Public Policy: Application to Nursing Practice	3
NURS 409	Population Health: Application to Nursing Practice	2
NURS 462	Advanced Pathophysiological Concepts: Application to Patient Care	3
NURS 477	Leadership and Management in Health Care	4
NURS 488	Clinical and Management Decision-making	3

Ancillary requirements

Credits required for admission and for program corequisites	51
Upper-division proficiency credits awarded after successful completion of NURS 308	39

Total Hours 122

The minimum number of credit hours required for this degree is 122.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Credits for program admission and program corequisites: 51

Semester 1		Hours
NURS 301	Nursing Informatics	3
NURS 307	Foundations of Professional Nursing I	3
Term Hours:		6
Semester 2		Hours
NURS 308	Foundation of Professional Nursing II	3
NURS 309	Population Health	3
Term Hours:		6
Semester 3		Hours
NURS 403	Evidence-based Practice in Health Care	3
NURS 409	Population Health: Application to Nursing Practice	2
Term Hours:		5
Semester 4		Hours
NURS 408	Ethics, Law and Public Policy: Application to Nursing Practice	3
NURS 462	Advanced Pathophysiological Concepts: Application to Patient Care	3
Term Hours:		6
Semester 5		Hours
NURS 406	Interprofessional Collaborative Practice	2
NURS 477	Leadership and Management in Health Care	4
Term Hours:		6
Semester 6		Hours

NURS 488	Clinical and Management Decision-making	3
Term Hours:		3
Total Hours:		32

Upper-division credits to be awarded after successful completion of NURS 308: 39

The minimum number of credit hours required for this degree is 122.

Nursing, Bachelor of Science (B.S.), traditional program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

- I. Effective therapeutic nursing practice
- II. Nursing judgment
- III. A spirit of inquiry
- IV. Professional identity

Student learning outcomes

The graduate is a knowledgeable professional nurse who will demonstrate:

1. Integration of theories and concepts from liberal education into nursing practice (III)
2. Knowledge, skills and attitudes in leadership, quality improvement and patient safety to provide high quality health care (I, II, IV)
3. Professional nursing practice grounded in the translation of current evidence (I, II, III)
4. Knowledge of skills in information literacy, management and patient care technology (III)
5. Knowledge of health care, financial and regulatory policies that influence the nature and functioning of the health care system (I, II)
6. Effective communication and collaboration skills with the interprofessional team to deliver high quality and safe patient care (I, II, IV)
7. Health promotion and disease prevention at the individual and population level necessary to improve population health (I, II)
8. Professionalism that reflects the inherent values of altruism, autonomy, human dignity, integrity and social justice fundamental to nursing (IV)
9. Competence to practice with patients, including individuals, families, groups, communities and populations across the lifespan and across the continuum of health care environments that respects the variations of care, the increased complexity and the use of health care resources inherent in caring for patients (I, II, III, IV)

Other information

Our international and non-native English-speaking students bring different perspectives and new thinking to our nursing programs. To ensure that all incoming student are prepared for the school's academic rigor, all international applicants and non-native English speaking applicants without a degree from a U.S. high school, college or university must provide additional information with their applications according to the English language proficiency guidelines on the program admission tab.

To be considered for admission to the School of Nursing, applicants must:

1. Be eligible for readmission or be in good standing at the last college or university attended
2. Submit a completed application with all required materials to the School of Nursing
3. Have a minimum cumulative GPA of 2.5 based on a scale of 4.0 on all college course work
4. Present no grades lower than B in anatomy, physiology or microbiology (Lower grades are not accepted for these courses. Anatomy, physiology, and microbiology must be taken within 10 years of enrollment into the nursing program. Grades lower than C in any other required courses are not accepted.)
5. Provide additional information with the application according to the English language proficiency guidelines for applicants who are international or non-native English speakers without a degree from a U.S. high school, college or university. (Additional information can be found on the "Required materials" tab of the VCU International Admissions website (<https://www.vcu.edu/admissions/apply/international/undergraduate-applicants/>.)
6. Complete the following prerequisites prior to enrollment:

Course	Title	Hours
BIOL 101	Biological Concepts (either satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
or BIOL 151	Introduction to Biological Sciences I	
BIOL 205	Basic Human Anatomy ¹	4
BIOL 217	Principles of Nutrition	3
BIOZ 101	Biological Concepts Laboratory (choose lab to match lecture component)	1
or BIOZ 151	Introduction to Biological Science Laboratory I	
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (either satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
or ANTH 103	Introduction to Anthropology	
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I (satisfies general education UNIV foundations)	3

UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II (satisfies general education UNIV foundations)	3
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Refer to the VCU Transfer Center website (<http://www.transfer.vcu.edu/>) for equivalencies at other colleges and universities.

1

Applicants attending colleges or universities which offer anatomy and physiology as a combined two-semester course must complete the entire course sequence prior to enrolling in the School of Nursing. One semester of a combined anatomy and physiology course will not transfer, nor can one semester of a combined anatomy and physiology course be used in conjunction with a stand-alone anatomy or physiology course to fulfill this requirement. If taking stand-alone anatomy and physiology courses, human or comparative anatomy and human or animal physiology are accepted.

Note: Applicants are not required to submit standardized test scores.

Applicants who have completed a baccalaureate degree in a field other than nursing may also apply for the accelerated program. A full list of admission requirements for second-degree applicants (p. 569) can be found under the accelerated program listing.

Degree requirements for Nursing, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77) ¹		30
Select 12-13 credits from general education Foundations of Learning area and 17-18 credits from Areas of Inquiry. ¹		
Major requirements		
• Major core requirements		
NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
NURS 325	Nursing of Adults I	6
NURS 335	Nursing of Women	5
NURS 403	Evidence-based Practice in Health Care	3
NURS 345	Nursing of Children	5
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	Pathophysiology and Pharmacology I	3
NURS 366	Pathophysiology and Pharmacology II	3
NURS 416	Community Health Nursing	5
NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	3
NURS 498	Senior Synthesis	8
• Additional major requirements		
IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
IPEC 561 or IPEC 562	IPE Virtual Geriatric Case IPE Quality Improvement Project Practicum	2

or IPEC 563	Interprofessional Complex Care Coordination	
Ancillary requirements		
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) ¹	3
or BIOL 151	Introduction to Biological Sciences I	
BIOL 205	Basic Human Anatomy ²	4
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
BIOL 217	Principles of Nutrition	3
BIOZ 101	Biological Concepts Laboratory	1
or BIOZ 151	Introduction to Biological Science Laboratory I	
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience) ¹	4
PSYC 304	Life Span Developmental Psychology	3
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (either satisfies BOK for social/behavioral sciences; SOCY 101 satisfies AOI for diversities in the human experience; ANTH 103 satisfies AOI for global perspectives) ¹	3
or ANTH 103	Introduction to Anthropology	
STAT 208	Statistical Thinking (satisfies general education quantitative foundations)	3
or STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	
Electives: 300-level or higher		6
Total Hours		122

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 24 credits.

2

Applicants attending colleges or universities which offer anatomy and physiology as a combined two-semester course must complete the entire course sequence prior to enrolling in the School of Nursing. One semester of a combined anatomy and physiology course will not transfer, nor can one semester of a combined anatomy and physiology course be used in conjunction with a stand-alone anatomy or physiology course to fulfill this requirement. If taking stand-alone anatomy and physiology courses, human or comparative anatomy and human or animal physiology are accepted.

The minimum number of credit hours required for this degree is 122.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year**Fall semester**

		Hours
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
Play course video for Introduction to Psychology		
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course (select any BOK or AOI)		2

Term Hours: 13

Spring semester

BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
SOCY 101	Introduction to Sociology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	3
Play course video for Introduction to Sociology		
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		

Term Hours: 13

Sophomore year**Fall semester**

BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304	Life Span Developmental Psychology	3
STAT 208 or STAT 210 or STAT 212	Statistical Thinking (satisfies general education quantitative foundation) or Basic Practice of Statistics or Concepts of Statistics	3

General education course (select BOK for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry) 3

Term Hours: 17

Spring semester

NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

General education course (select AOI for global perspective) 3

Term Hours: 17

Junior year**Fall semester**

IPEC 501	Foundations of Interprofessional Practice	1
NURS 325	Nursing of Adults I	6
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	Pathophysiology and Pharmacology I	3

Term Hours: 15

Spring semester

IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 366	Pathophysiology and Pharmacology II	3
NURS 403	Evidence-based Practice in Health Care	3

Term Hours: 17

Senior year**Fall semester**

NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	3

Electives (300-level or higher) 6

Term Hours: 15

Spring semester

IPEC 561	IPE Virtual Geriatric Case or IPE Quality Improvement Project	2
IPEC 562	Practicum	
IPEC 563	Coordination or Interprofessional Complex Care	

NURS 416 Community Health Nursing 5

NURS 498 Senior Synthesis 8

Term Hours: 15

Total Hours: 122

1

Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

The minimum number of credit hours required for this degree is 122.

SCHOOL OF PHARMACY

The School of Pharmacy was established officially in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. The two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work and a Bachelor of Science degree was awarded. In 1960, the program lengthened to a five-year course leading to a Bachelor of Science in Pharmacy degree. In 1975 authority was granted to offer the Doctor of Pharmacy degree, which was initially offered to a small number of students who already completed four or five years of the B.S. program. A six-year program leading to the Doctor of Pharmacy degree was adopted as the only professional offering by the school in 1995. The School of Pharmacy currently enrolls students in a four-year professional Doctor of Pharmacy program curriculum following completion of at least 52 credits of pre-professional studies taken at VCU or elsewhere. The Doctor of Pharmacy degree program includes classroom instruction, practice laboratory instruction, as well as introductory and advanced pharmacy practice experiences.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Departments in the school have the responsibility for administering a graduate program leading to the M.S. and Ph.D. in Pharmaceutical Sciences. This program includes areas of specialization in medicinal chemistry, pharmaceuticals, pharmacotherapy and pharmacy administration. In 2020, the School of Pharmacy in partnership with the College of Engineering first initiated a Ph.D. degree in pharmaceutical engineering. These programs provide the preparation and research experience for academic, governmental and industrial careers. Graduate degrees in pharmaceutical sciences do not provide eligibility for licensure as a pharmacist.

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Statement of purpose

The School of Pharmacy at VCU exists to provide exceptional programs benefiting the commonwealth of Virginia and society by offering the highest quality education and training for the development of health care practitioners, scientists, professional leaders and responsible citizens. These individuals are committed to shaping the health care world of tomorrow while serving society's health care needs today.

Mission statement

Mission

To achieve excellence in professional and graduate programs through innovative education and leading-edge research. We will achieve our mission by graduating outstanding future pharmacists and scientists who will improve human health, foster exemplary research and provide sustaining contributions to interprofessional patient care.

Vision

A transformational leader in pharmacy education, clinical practice and clinical and pharmaceutical research.

Core values

- Innovation**
We encourage innovations and ideas that enhance the school's mission.
- Personal growth**
We pursue professional growth and personal development that drives excellence.
- Integrity and respect**
We demonstrate ethical behaviors, personal responsibility and respect for others.
- Collaboration**
We embrace interprofessional and interdisciplinary collaboration in patient care, teaching, learning and research.
- Inclusive excellence**
We promote an environment of engagement and inclusion that values the diversity and contributions of our students, staff, faculty and administrators.

Philosophy

The School of Pharmacy has committed to developing progressive models of pharmacy practice while maintaining the foundational pharmaceutical sciences. In developing the curriculum of the school, the faculty recognizes that an educated person should be prepared to assume a responsible and rewarding role in society. The new paradigm of patient-centered, team-based care guides the school's curriculum committee and faculty in the design and implementation of the Doctor

of Pharmacy curriculum. The curriculum is designed to provide a sound, scientific and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. It also includes courses in the arts and humanities in order to provide students with a broad educational base that will permit participation in community life, not only as a professional, but also as an informed, concerned citizen. The professional curriculum is rigorous and highly demanding of the student's time. The faculty has adopted educational outcomes for the curriculum that describe the knowledge, skills, behaviors, abilities and attitudes that promote holistic patient well-being expected of graduates to deliver the highest quality of direct patient care as an interprofessional team member.

Facilities

The School of Pharmacy is located in the Robert Blackwell Smith Building at 12th and East Clay streets. This building — named in honor of a distinguished former dean of pharmacy, former president of the Medical College of Virginia and former provost of the MCV Campus — was completed in 1984 with the help of contributions from many alumni and friends of the School of Pharmacy. Additional classrooms, offices and laboratories are located in McGuire Hall and the Virginia BioTechnology Research Park, both located within a few blocks of the Smith Building. The Smith Building Lobby houses the school's Heritage Trail that displays VCU's, MCV's and the school's history, as well as the history of pharmacy in Virginia.

Classes for students in pharmacy also are conducted in Sanger Hall, located between 11th and 12th streets on East Marshall Street, and McGuire Hall, located at the corner of 12th and Clay streets. In conjunction with VCU Health, students receive clinical experience in the hospitals and clinics on the MCV Campus. Other facilities available for teaching include area hospitals and pharmacies. The major library holdings are in the Tompkins-McCaw Library for the Health Sciences at 12th and East Clay streets.

Location in a major health sciences center provides excellent opportunities for interdisciplinary research and access to clinical facilities. The school is well equipped for graduate research and provides leadership to the VCU Institute for Structural Biology, Drug Discovery and Development at the Virginia BioTechnology Research Park. The school also supports the Center for Compounding Practice and Research, the Center for Biomarker Research and Precision Medicine, and the Center for Pharmacy Practice Innovation.

SCHOOL OF SOCIAL WORK

The oldest of its kind in the South, Virginia Commonwealth University's School of Social Work was established in 1917 as the Richmond School of Social Economy. Later renamed the School of Social Work and Public Health, it became the first unit of Richmond Professional Institute.

The school was created initially in response to community needs in working with World War I veterans and their social and health problems. Subsequent development of the school has expanded activity into all areas of human service.

With the creation of VCU in 1968, the School of Social Work became a unit of what is now the university's Monroe Park Campus. The school offers baccalaureate-, master's- and doctoral-level programs in Richmond, and the capital provides educational opportunities in many state government agencies.

Social work education at VCU is highly individualized and is characterized by a close relationship between faculty and students. Faculty members help students learn the form and method of social work practice, and students are encouraged to discover their own unique style of helping others. The school's educational programs are designed to prepare students for practice in many different kinds of social agencies. A combination of classroom courses and concurrent fieldwork experiences facilitates integration of knowledge, attitudes and skills necessary for professional practice. The integrated class and fieldwork curriculum offers students the opportunity to acquire a substantial base in social work practice, patterns of human behavior and development, organization and operation of social welfare programs and policies, the methods of scientific inquiry in social work, and the needs of special populations.

The profession of social work

The goals of the profession of social work are to provide services to persons who are vulnerable due to a lack of personal, social and/or institutional resources to meet their emotional, health and economic needs. Social work practice is the application of professional knowledge, skills and values across a range of settings and populations. The focus of practice is on individuals, couples, families, groups and communities. In addition to direct clinical social work practice, social workers are involved in the administration of human service programs, social planning, the development of social policies, research and evaluation, and teaching.

In order to achieve the goals of promoting social justice and enhancing well-being for individuals, families, groups and communities, social workers provide a variety of services primarily in public and nonprofit organizational contexts. Examples of the range of settings in which social workers practice include community centers, public social services, child welfare, residential treatment facilities, schools, community mental health agencies, family and children's service agencies, psychiatric and acute care hospitals, substance abuse treatment facilities, services for the elderly, court services and adult and juvenile rehabilitation facilities.

Professional education for social work practice dates to the early 1900s. The contributions of the profession are evidenced in health and mental health care, the well-being of children and families, the development and implementation of social policies, the planning, delivery and evaluation of human services, and a broad base of research on the human condition. The knowledge base of the profession and the integration of related social, behavioral and biological sciences acquired

through professional education facilitates the contributions of social workers in multidisciplinary contexts.

Social work practice is designed to enrich quality of life by enabling individuals, groups, communities and organizations to achieve their greatest potential development. The goal of the School of Social Work at VCU is to provide professional education in response to these needs.

Administration

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Ananda Newmark, Ph.D.

Director, B.S.W. Program

Accreditation

VCU's Bachelor of Social Work and Master of Social Work programs are accredited by the Commission on Accreditation of the Council on Social Work Education – the accrediting body for all schools of social work at both the baccalaureate and master's levels. Copies of the Accreditation Standards and Curriculum Policy Statement are available in the Office of the Dean.

Financial assistance

Although financial assistance is limited, some funds are available from a variety of sources. No prospective student should refrain from seeking admission to the school for financial reasons alone. Besides the federal financial aid programs outlined in the undergraduate or graduate study areas of the bulletins, the university and the school also offer scholarships and/or teaching assistantships at all degree levels.

The H.H. Hibbs Loan Fund was established by the School of Social Work Alumni Association for short-term emergency needs. Enrolled students who wish to apply for a loan should discuss this with their faculty adviser and the associate dean.

For more information on these financial aid opportunities (<https://socialwork.vcu.edu/student/scholarships/>), visit the School of Social Work website.

Continuing education

Continuing education is a vital part of professional development. The School of Social Work offers institutes and workshops as part of the school's commitment to enhance social work practice and broaden educational experiences for students, social workers, field instructors and others in social service delivery systems.

State, regional and local agencies and institutions frequently identify educational and training needs in content or skill areas for selected staff members. The school, through contractual arrangements, contributes expertise in designing and implementing short-term training courses and materials. Offerings are planned throughout the year.

Associations and student interest groups

Alumni Association

The School of Social Work Alumni Association supports the school, its students and faculty. All graduates of the School of Social Work are members of the alumni association. The association falls under the umbrella of the VCU Alumni Association.

B.S.W. Student Association

The Baccalaureate Social Work Student Association, an organization of students in the Bachelor of Social Work Program, was established to facilitate communication among students and between the student body and the school faculty and staff. This organization plays a vital role in the educational process. Through student representation on committees within the school, BSWSA members participate in decision-making processes. In addition, the association enables students to conduct a variety of social and professional activities throughout the year.

M.S.W. Student Association

The Master of Social Work Student Association is the organization of M.S.W. students enrolled in the school. Established for the purposes of facilitating communication among students and between the student body and the school, the association provides a means by which student concerns and ideas can be formulated and acted upon. It also enables students to conduct a variety of social, civic and educational activities throughout the year.

This organization plays a vital role in the educational process. Student contributions to the governance and curriculum of the school are of value to both the institution and the students. Participation in the decision-making process is accomplished through student representation on committees. Faculty and students work closely together throughout the year to meet the needs of graduate social work education. Students participate as full members of committees within the school.

Association of Black Social Workers – VCU Chapter

The Association of Black Social Workers was established to create and maintain an atmosphere of unity and support among black students in the School of Social Work. It serves to assist students in their personal and professional growth and development. Membership in this organization helps students to develop a keen awareness of the acute needs of the black community and the active role that must be assumed by the dedicated black professional social worker in promoting the general welfare of black citizens. To attain these goals, the organization utilizes the educational process and related experiences of students at

the school and in fieldwork. Students are encouraged to participate in all phases of the academic environment.

LGBTQIA and Allied Social Work Group VCU

The LGBTQIA and Allied Social Work Group provides a safe space for LGBTQIA and allied social workers to collaborate and engage in advocacy efforts. The organization also promotes awareness of LGBTQIA topics within the VCU social work community through curriculum building, education and social events.

Doctoral Student Association

The Doctoral Student Association is a collegial association available to all doctoral students regardless of full- or part-time status. Its primary purpose is to provide information, resources, advocacy and support to students throughout the doctoral program experience. Governance of the association is conducted on a rotating leadership and consensual basis. The Doctoral Student Association provides doctoral student representatives to various committees of the school governance structure.

Other student interest groups

The School of Social Work supports the development of groups that address a variety of student needs and interests.

B.S.W. Program

Ananda Newmark, Ph.D.

Director, B.S.W. Program
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The B.S.W. Program administers the undergraduate offerings of the School of Social Work, including the Bachelor of Social Work and the minor in social welfare.

Guided by the principle of promoting social justice, the goals of the B.S.W. Program are:

1. To provide an integrated curriculum based on the knowledge, skills, ethics and values essential for beginning generalist social work practice
2. To offer an educational experience that facilitates the critical analysis of social work knowledge and practice
3. To provide classroom and field instruction experiences designed to promote culturally sensitive practice with diverse and oppressed groups
4. To provide an environment that encourages lifelong learning and prepares students for professional growth and development

- Social Work, Bachelor of (B.S.W.) (p. 579)

- Social welfare, minor in (p. 583)

Social Work, Bachelor of (B.S.W.)

The Bachelor of Social Work requires completion of 120 credits, including 46 credits in the major. The curriculum of the baccalaureate program is specifically designed to prepare students for beginning-level generalist social work practice. This practice model requires a broad base of knowledge about individuals, families, groups, communities and organizations and an appreciation of cultural diversity. General education courses provide an essential foundation for the upper-level professional

curriculum and are required for admission to junior and senior social work courses.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate ethical and professional behavior
2. Engage diversity and difference in practice
3. Advance human rights and social, economic and environmental justice
4. Engage in practice-informed research and research-informed practice
5. Engage in policy practice
6. Engage with individuals, families, groups, organizations and communities
7. Assess individuals, families, groups, organizations and communities
8. Intervene with individuals, families, groups, organizations and communities
9. Evaluate practice with individuals, families, groups, organizations and communities

Academic policies

Transfer students

Students who transfer to VCU from another institution as social work majors are not required to complete the UNIV 111 and UNIV 112 sequence. Instead, these students must transfer three credits in writing and composition course work with a grade of C or better (approved by the program director) in lieu of UNIV 111. Students may also transfer three additional credits in writing and composition course work with a grade of C or better (approved by the program director) in lieu of UNIV 112 or complete UNIV 200 at VCU with a grade of C or better. The remaining three credits from the UNIV 111, UNIV 112 and UNIV 200 sequence requirement may be completed as general electives. This policy applies only to students who transfer to VCU after their freshman year and may not be used by students who began their studies as freshmen at VCU.

Transfer of credits from other colleges or universities or from other programs at VCU is determined on an individual basis.

Application process

Students eligible to register for upper-level social work courses need to make an appointment with their adviser to review and complete the "Application for Admission to the B.S.W. Professional Preparation Program" form. This form is available from your student success adviser. Although the B.S.W. program can be completed on a part-time basis, it cannot be completed exclusively in the evening because of field practicum requirements and the scheduling of some classes.

Course restrictions

Practice (SLWK 332, SLWK 441 and SLWK 442) and field education (SLWK 393, SLWK 494-SLWK 495) courses and the senior seminar (SLWK 499) are restricted to social work majors only. Students minoring in social welfare, or other students with permission of program director or course instructor, may take the following:

Course	Title	Hours
SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3

SLWK 330	Person in Society II	3
SLWK 380	Foundations of Social Work Research I	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 422	Social Welfare Legislation and Services	3
SLWK 431	Person in Society III	3

In all cases, however, prerequisites must be satisfied.

Field placements require students to spend 14 hours a week in an agency and cannot be completed on nights and weekends.

Honors in social work

Undergraduate social work majors may earn honors in social work by excelling academically and completing a research-based honors thesis under the supervision of faculty mentors. Students apply for honors in social work in the second semester of their junior year (spring or summer). To graduate with honors in social work, students must satisfy all of the following conditions:

- Earn a 3.5 cumulative grade point average.
- Earn a grade of A in SLWK 380 and SLWK 381 and a minimum grade of B in all other social work courses.
- Complete six to nine credits of independent study (SLWK 492) with a minimum grade of B to propose and implement a research project under the supervision of a faculty mentor.
- Present and successfully defend in writing and orally the findings from the research project in the form of an honors thesis to a committee of three faculty members (one of whom is the student's mentor).

Students who meet these requirements and all other graduation requirements of the university will have honors in social work noted on their transcripts. For further information about the application process and detailed instructions for completing the honors thesis, students should contact the B.S.W. program director.

Special requirements

To complete lower-division requirements and begin the professional preparation curriculum of the B.S.W. program, students must:

1. Complete the following specific courses (38 credits):

Course	Title	Hours
ANTH 103	Introduction to Anthropology	3
BIOL 101	Biological Concepts	3
BIOZ 101	Biological Concepts Laboratory	1
MATH 131	Introduction to Contemporary Mathematics	3
PHIL from approved list		3
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology	4
PSYC 304	Life Span Developmental Psychology	3
SLWK 201	Introduction to Social Work	3
SLWK 230	Communication in the Helping Process	3

SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology	3
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Total Hours		38

- Complete 16 additional credits from the general education requirements for a total of 54 credits to achieve junior status
- Achieve a minimum grade of C in UNIV 112 and UNIV 200
- Achieve a minimum grade of B in SLWK 201 and SLWK 230
- Achieve a minimum cumulative GPA of 2.5
- Apply for admission with academic adviser to begin the professional preparation curriculum of the B. S. W. program.
- Agree to abide by the National Association of Social Workers Code of Ethics as students and emerging professionals

Other program requirements and guidelines:

- All 300 level SLWK prerequisite courses require a minimum grade of C before entering 400-level SLWK courses.
- Students must have a minimum grade of C in all required social work courses to graduate.
- A student who earns a grade of D or F in any required social work course may repeat the course once. If a grade of D or F is earned in the repeated course, the student will be terminated from the B.S.W. program.
- Credit is not given for life experiences.
- As a condition for graduation, students must submit in the spring term of a senior year a portfolio of selected assignments.
- There are additional policies that affect students' progression in the professional degree program. Students are responsible for compliance with these policies. They are listed in the Student Policy Handbook, which is available on the School of Social Work website at socialwork.vcu.edu (<http://socialwork.vcu.edu>).

Foreign language requirement: Students who place into or are waived out of the 101 level in a foreign language must complete the 102 level in the same language. Students who place into or are waived out of the 101 and 102 level in a foreign language must complete at least one college-level foreign language course in any language. Credits earned by CLEP do not count toward the fulfillment of this requirement.

Degree requirements for Social Work, Bachelor of (B.S.W.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
SLWK 201	Introduction to Social Work	3

SLWK 230	Communication in the Helping Process	3
SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3
SLWK 330	Person in Society II	3
SLWK 332	Social Work Practice: Fundamentals	3
SLWK 380	Foundations of Social Work Research I	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 393	Junior Field Instruction	3
SLWK 422	Social Welfare Legislation and Services	3
SLWK 431	Person in Society III	3
SLWK 441	Social Work Practice I	3
SLWK 442	Social Work Practice II	3
SLWK 494	Senior Field Instruction I	3
SLWK 495	Senior Field Instruction II	3
SLWK 499	Senior Seminar	1

Ancillary requirements

ANTH 103	Introduction to Anthropology (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOL 103	Biological Concepts Laboratory	1
BIOL 103	Global Environmental Biology	3
	or BIOL 201 Human Biology	
	or BIOL 217 Principles of Nutrition	
	or SOCS 340 Human Sexuality	
	or PSYC 401 Physiological Psychology	
	or PSYC 406 Perception	
	or PSYC 412 Health Psychology	
MATH 131	Introduction to Contemporary Mathematics (satisfies general education quantitative foundations)	3-4
	or MATH 141 Algebra with Applications	
	or MATH 151 Precalculus Mathematics	
	or MATH 200 Calculus with Analytic Geometry I	
PHIL 201	Introduction to Ethics ¹	3
	or PHIL 211 History of Ethics	
	or PHIL 212 Ethics and Applications	
	or PHIL 213 Ethics and Health Care	
	or PHIL 221 Critical Thinking	
	or PHIL 222 Logic	
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education AOI for diversities in the human experience)	4
PSYC 304	Life Span Developmental Psychology	3
PSYC 407	Psychology of the Abnormal	3
SOCY 101 Play course video for Introduction to Sociology	Introduction to Sociology (satisfies general education AOI for diversities in the human experience)	3
Electives from HIST, POLI or ECON		3

Foreign language through the 102 level (including ASL)	6
Open electives	
Select any course.	21
Total Hours	120

1

If PHIL 201 or PHIL 221 is taken, students may need to take additional open electives to meet degree requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
ANTH 103	Introduction to Anthropology (satisfies general education BOK for social/behavioral sciences and AOI for global perspectives)	3
MATH 131	Introduction to Contemporary Mathematics (satisfies general education quantitative foundations)	3
PSYC 101	Introduction to Psychology (satisfies general education AOI for diversities in the human experience)	4
SOCY 101	Introduction to Sociology (satisfies general education AOI for diversities in the human experience)	3
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Term Hours:		16

Spring semester

BIOL 101	Biological Concepts (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BIOZ 101	Biological Concepts Laboratory	1
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Electives from HIST, POLI or ECON		3
General education course (select any AOI)		3
Open elective		3
Term Hours:		16

Sophomore year

Fall semester		Hours
SLWK 230	Communication in the Helping Process	3

UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Foreign language 101		3
General education course (select a BOK for humanities and fine arts and AOI for creative inquiry)		3
Open elective		3
Term Hours:		15

Spring semester

PHIL 201	Introduction to Ethics ¹	3
or	or History of Ethics ¹	
PHIL 211	or Ethics and Applications ¹	
or	or Ethics and Health Care ¹	
PHIL 212	or Critical Thinking ¹	
or	or Logic ¹	
PHIL 213		
or		
PHIL 221		
or		
PHIL 222		
PSYC 304	Life Span Developmental Psychology	3
SLWK 201	Introduction to Social Work	3
Foreign language 102		3
Open elective		3
Term Hours:		15

Junior year

Fall semester

SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3
SLWK 380	Foundations of Social Work Research I	3
Open electives		6
Term Hours:		15

Spring semester

SLWK 330	Person in Society II	3
SLWK 332	Social Work Practice: Fundamentals	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 393	Junior Field Instruction	3
Open elective		3
Term Hours:		15

Senior year

Fall semester

BIOL 103	Global Environmental Biology	3
or	or Human Biology	
BIOL 201	or Principles of Nutrition	
or	or Human Sexuality	
BIOL 217	or Physiological Psychology	
or	or Perception	
SOCS 340	or Health Psychology	
or		
PSYC 401		
or		
PSYC 406		
or		
PSYC 412		
SLWK 422	Social Welfare Legislation and Services	3
or	or Person in Society III	
SLWK 431		

SLWK 441	Social Work Practice I	3
SLWK 494	Senior Field Instruction I	3
Open elective		3
Term Hours:		15
Spring semester		
PSYC 407	Psychology of the Abnormal	3
SLWK 422 or SLWK 431	Social Welfare Legislation and Services or Person in Society III	3
SLWK 442	Social Work Practice II	3
SLWK 495	Senior Field Instruction II	3
SLWK 499	Senior Seminar	1
Term Hours:		13
Total Hours:		120

1

If PHIL 201 or PHIL 221 is taken, students may need to take additional open electives to meet degree requirements

The minimum number of credit hours required for this degree is 120.

Social welfare, minor in

A minor in social welfare is available to non-social work majors. This minor consists of 18 credits, including:

Course	Title	Hours
SLWK 201	Introduction to Social Work	3
SLWK 422	Social Welfare Legislation and Services	3
Select four of the following:		12
SLWK 200	Building a Just Society	
SLWK 230	Communication in the Helping Process	
SLWK 311	Social Work and Oppressed Groups	
SLWK 313	Person in Society I	
SLWK 330	Person in Society II	
SLWK 380	Foundations of Social Work Research I	
SLWK 381	Foundations of Social Work Research II	
SLWK 431	Person in Society III	
Total Hours		18

Practice and field courses are restricted to majors. Prerequisite courses are not required for those completing the minor.

VCU LIFE SCIENCES

VCU entered a new era when it implemented, as one of its highest priorities, a new universitywide matrix academic organization called VCU Life Sciences, created in response to the need to prepare students for the anticipated growth in new life sciences jobs in the coming decades. The skills identified for these jobs require highly interdisciplinary or multidisciplinary approaches, often falling between the boundaries of traditional academic disciplines. The way that the life sciences are understood and taught is likely to be fundamentally different, with increasing emphasis on systems biosciences as an important complement to more traditional, purely reductive approaches. The objective of Phase II of VCU's strategic plan specifically outlines the need to bring VCU's major academic and administrative divisions together to work on mutual initiatives that will accomplish VCU's goal of national leadership. VCU Life Sciences is a response to that objective.

Faculty

VCU Life Sciences faculty members are drawn from departments across the university. Lists of participating faculty and academic affiliations are available on the VCU Life Sciences website (<https://lifesciences.vcu.edu/>) for each program.

Facilities

VCU Life Sciences comprises the resources and interests not only of the Monroe Park Campus and the VCU Medical Center, but also the Virginia BioTechnology Research Park (<http://www.vabiotech.com/>) and the VCU Rice Rivers Center (<https://ricerivers.vcu.edu/>), a property of 342 acres overlooking the James River in Charles City County. The \$27 million Eugene P. and Lois E. Trani Center for Life Sciences houses administrative offices, the Center for Environmental Studies, state-of-the-art laboratories and classrooms, and a climate-controlled greenhouse. The Center for Biological Data Science and the High Performance Research Computing Core Facility are housed in Grace E. Harris Hall.

VCU Life Sciences supports two university centers for its research and teaching efforts: the Center for Environmental Studies (<http://www.vcu.edu/cesweb/>) and the Center for Biological Data Science (<https://cbds.vcu.edu/>).

Administration

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Vice provost for life sciences

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Rodney J. Dyer, Ph.D.

Director, Center for Environmental Studies

Stephen Fong, Ph.D.

Director, Ph.D. in Integrative Life Sciences program

Center for Biological Data Science

Michael S. Rosenberg, Ph.D.

Director

cbds.vcu.edu (<https://cbds.vcu.edu/>)

The Center for Biological Data Science is a multidisciplinary focus of research and scholarly activity within VCU Life Sciences. The mission of the center is to apply the principles of complexity to contemporary biological problems in all aspects of research and scholarly activity, supporting research in integrative molecular, cellular and developmental biology.

- Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic sciences (p. 584)
- Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational sciences (p. 588)
- Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical sciences (p. 591)

Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic sciences

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences' general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biological/genomic sciences, computational sciences or quantitative/statistical sciences through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program may contact the bioinformatics academic adviser at (804) 828-0825.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story
- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics

- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic sciences

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 251	Phage Discovery I	2
BNFO 252	Phage Discovery II	2
BNFO 301	Introduction to Bioinformatics	3
BNFO 411	Ethical Issues in Life Sciences	2
BNFO 420	Applications in Bioinformatics	3
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
CMSC 255	Introduction to Programming	4
STAT 321	Introduction to Statistical Computing	3
• Concentration requirements		
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
BNFO/BIOL 541	Laboratory in Molecular Genetics	2
or BIOZ 476	Molecular Capstone Laboratory	
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3
CHEM 403	Biochemistry I	3
Select concentration electives from list below.		10
Ancillary requirements¹		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
MATH 200	Calculus with Analytic Geometry I	4

PHYS 207	University Physics I (either course satisfies general education AOI for scientific and logical reasoning)	4-5
or PHYS 201	General Physics I	
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
Open electives		
Select any course.		23-24
Total Hours		120

¹

The ancillary courses fulfill 12 of the required 30 credits of general education, including fulfillment of the quantitative foundations requirement, the natural sciences breadth of knowledge requirement, and the maximum allowable nine credits of scientific and logical reasoning area of inquiry.

The minimum number of credit hours required for this degree is 120.

Concentration electives

Course	Title	Hours
BIOZ 310	Laboratory in Genetics	2
BIOL 317	Ecology	3
BIOZ 317	Ecology Laboratory	2
BIOL 318	Evolution	3
BIOL 455	Immunology	3
BIOZ 476	Molecular Capstone Laboratory (if BIOL 541/BNFO 541 was already taken as concentration-required course)	2
BIOL 550	Ecological Genetics	3
BNFO 391	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 393	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 491	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 492	Independent Study (variable) ¹	1-4
BNFO 493	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics (variable) ¹	1-2
BNFO 497	Research and Thesis (variable) ¹	1-4
BNFO/BIOL 541	Laboratory in Molecular Genetics (if BIOZ 476 was already taken as concentration-required course)	2
BNFO 591	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 593	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
MICR 515	Principles of Molecular Microbiology	3

STAT 314	Applications of Statistics	4
STAT 421	Applied Statistical Computing Using R	3

1

May be taken only with adviser's permission

2

No more than eight combined credits of BNFO 391, BNFO 393, BNFO 491, BNFO 493, BNFO 591 and BNFO 593 may apply toward concentration elective requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BNFO 251	Phage Discovery I	2
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
Term Hours:		15

Spring semester

BIOL 152	Introduction to Biological Sciences II	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 252	Phage Discovery II	2
CHEM 102	General Chemistry II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15

Sophomore year**Fall semester**

BIOL 310	Genetics	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
CHEZ 102	General Chemistry Laboratory II	1
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3

General education course	3
Term Hours:	16

Spring semester

BNFO 301	Introduction to Bioinformatics	3
CMSC 255	Introduction to Programming	4
MATH 200	Calculus with Analytic Geometry I	4
Open electives		3
Term Hours:		14

Junior year**Fall semester**

BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2
CHEM 301	Organic Chemistry	3
Concentration elective		3
Open electives		4
Term Hours:		15

Spring semester

CHEM 302	Organic Chemistry	3
PHYS 207	University Physics I (satisfies general education AOI for scientific and logical reasoning)	5
STAT 321	Introduction to Statistical Computing	3
Concentration electives		4
Term Hours:		15

Senior year**Fall semester**

BNFO 540	Fundamentals of Molecular Genetics	3
BNFO 541	Laboratory in Molecular Genetics	2
CHEM 403	Biochemistry I	3
Open electives		7
Term Hours:		15

Spring semester

BNFO 420	Applications in Bioinformatics	3
Concentration elective		3
Open electives		9
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Bioinformatics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 142 credits rather than the 154 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in an academic setting. The M.S. degree provides two tracks: (1) a thesis track with formal research experience and (2) a nonthesis (professional science master's) track combining business skills with an externship experience. This degree can lead to

expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Applicants to this accelerated program must have junior or senior status in VCU's B.S. in Bioinformatics program. Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours; an overall GPA of 3.0; and a GPA of 3.0 in bioinformatics degree course work. Applicants should have completed a substantial amount of course work toward the B.S. degree and maintained a strong academic record. Successful applicants would enter the accelerated program in the fall semester of their senior year and start the M.S. in the term after which they receive their bachelor's degree.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program immediately following completion of their junior year, but no later than July 1 of that year. Two reference letters (at least one from a bioinformatics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the program director to the M.S. in Bioinformatics program during their junior year and before they have completed 90 credits toward the B.S. degree.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate bioinformatics adviser and the program director of the bioinformatics graduate program.

Degree requirements

The Bachelor of Science in Bioinformatics degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may substitute for open electives, bioinformatics degree electives or concentration-specific requirements for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. For best alignment of these credits, students must plan ahead.

Examples of bioinformatics degree courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
BIOS 543	Graduate Research Methods I	3
BNFO 540	Fundamentals of Molecular Genetics	3

BNFO 541	Laboratory in Molecular Genetics	2
BNFO 592	Independent Study	1-9
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 692	Independent Study	1-9
CMSC 508	Database Theory	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2
Required B.S. course work		10
Term Hours:		15
Spring semester		
BNFO 541	Laboratory in Molecular Genetics	2
PHYS 207	University Physics I	5
STAT 321	Introduction to Statistical Computing	3
Required B.S. course work		5
Term Hours:		15
Senior year		
Fall semester		
BNFO 540	Fundamentals of Molecular Genetics	3
CMSC 256	Data Structures and Object Oriented Programming	4
Required B.S. course work		8
Term Hours:		15
Spring semester		
Required B.S. course work		5
BNFO 601	Integrated Bioinformatics	4
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
Term Hours:		15
Fifth year		
Fall semester		
BNFO 531	Quantitative Methods in Bioinformatics	3
BNFO 690	Seminars in Bioinformatics	1
OVPR 601	Scientific Integrity	1
Graduate electives (500 and 600 level) ¹		5
Term Hours:		11
Spring semester		
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 700	Externship in Bioinformatics	2

Graduate electives (500 and 600 level) ¹	6
Term Hours:	11

1

For example: 500-level (or higher) BIOL, BIOC, BIOS, BNFO, CMSC, ENVS, HGEN, LFSC, STAT courses

Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational sciences

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences' general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biological/genomic sciences, computational sciences or quantitative/statistical sciences through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program may contact the bioinformatics academic adviser at (804) 828-0825.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story
- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics
- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational sciences

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 251	Phage Discovery I	2
BNFO 252	Phage Discovery II	2
BNFO 301	Introduction to Bioinformatics	3
BNFO 411	Ethical Issues in Life Sciences	2
BNFO 420	Applications in Bioinformatics	3
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
CMSC 255	Introduction to Programming	4
STAT 321	Introduction to Statistical Computing	3
• Concentration requirements		
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
CMSC 355	Fundamentals of Software Engineering	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Select concentration electives from list below.		11
Ancillary requirements ¹		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
MATH 200	Calculus with Analytic Geometry I	4
PHYS 207	University Physics I (either course satisfies general education AOI for scientific and logical reasoning) ¹	4-5
or PHYS 201	General Physics I	
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
Open electives		
Select any course.		23-24
Total Hours		120

1

The ancillary courses fulfill 12 of the required 30 credits of general education, including fulfillment of the quantitative foundations requirement, the natural sciences breadth of knowledge requirement, and the maximum allowable nine credits of scientific and logical reasoning area of inquiry.

The minimum number of credit hours required for this degree is 120.

Concentration electives

Course	Title	Hours
BIOL 318	Evolution	3
BNFO 391	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 393	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 491	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 492	Independent Study (variable) ¹	1-4
BNFO 493	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics (variable) ¹	1-2
BNFO 497	Research and Thesis (variable) ¹	1-4
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
BNFO/BIOL 541	Laboratory in Molecular Genetics	2
BNFO 591	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 593	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
CHEM 301	Organic Chemistry	3
CMSC 409	Artificial Intelligence	3
CMSC 411	Computer Graphics	3
CMSC 416	Introduction to Natural Language Processing	3
CMSC 435	Introduction to Data Science	3
CMSC 508	Database Theory	3
STAT 314	Applications of Statistics	4
STAT 421	Applied Statistical Computing Using R	3

1

May be taken only with adviser's permission

2

No more than 8 combined credits of BNFO 391, BNFO 393, BNFO 491, BNFO 493, BNFO 591, and BNFO 593 may apply toward concentration elective requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BNFO 251	Phage Discovery I	2
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3

Term Hours: 15

Spring semester		Hours
BIOL 152	Introduction to Biological Sciences II	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 252	Phage Discovery II	2
CHEM 102	General Chemistry II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3

Term Hours: 15

Sophomore year

Fall semester		Hours
BIOL 310	Genetics	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
CHEZ 102	General Chemistry Laboratory II	1
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3

Term Hours: 16

Spring semester		Hours
BNFO 301	Introduction to Bioinformatics	3
CMSC 255	Introduction to Programming	4
MATH 200	Calculus with Analytic Geometry I	4
Open electives		3
General education course		3

Term Hours: 14

Junior year

Fall semester		Hours
BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2

CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
Concentration elective		3
Term Hours:		15
Spring semester		
CMSC 355	Fundamentals of Software Engineering	3
PHYS 207	University Physics I (satisfies general education AOI for scientific and logical reasoning)	5
STAT 321	Introduction to Statistical Computing	3
Concentration electives		4
Term Hours:		15
Senior year		
Fall semester		
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
Concentration elective		4
Open electives		8
Term Hours:		15
Spring semester		
BNFO 420	Applications in Bioinformatics	3
Open electives		12
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Bioinformatics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 142 credits rather than the 154 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in an academic setting. The M.S. degree provides two tracks: (1) a thesis track with formal research experience and (2) a nonthesis (professional science master's) track combining business skills with an externship experience. This degree can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Applicants to this accelerated program must have junior or senior status in VCU's B.S. in Bioinformatics program. Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours; an overall GPA of 3.0; and a GPA of 3.0 in bioinformatics degree course work. Applicants should have completed a substantial amount of course work toward the B.S. degree and maintained a strong academic record. Successful applicants would enter the accelerated program in the fall semester of their senior year and start the M.S. in the term after which they receive their bachelor's degree.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's

program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program immediately following completion of their junior year, but no later than July 1 of that year. Two reference letters (at least one from a bioinformatics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the program director to the M.S. in Bioinformatics program during their junior year and before they have completed 90 credits toward the B.S. degree.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "[Satisfactory academic progress \(http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/\)](http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate bioinformatics adviser and the program director of the bioinformatics graduate program.

Degree requirements

The Bachelor of Science in Bioinformatics degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may substitute for open electives, bioinformatics degree electives or concentration-specific requirements for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. For best alignment of these credits, students must plan ahead.

Examples of bioinformatics degree courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
BIOS 543	Graduate Research Methods I	3
BNFO 540	Fundamentals of Molecular Genetics	3
BNFO 541	Laboratory in Molecular Genetics	2
BNFO 592	Independent Study	1-9
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 692	Independent Study	1-9
CMSC 508	Database Theory	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2
Required B.S. course work		10
Term Hours:		15
Spring semester		
BNFO 541	Laboratory in Molecular Genetics	2
PHYS 207	University Physics I	5
STAT 321	Introduction to Statistical Computing	3
Required B.S. course work		5
Term Hours:		15
Senior year		
Fall semester		
BNFO 540	Fundamentals of Molecular Genetics	3
CMSC 256	Data Structures and Object Oriented Programming	4
Required B.S. course work		8
Term Hours:		15
Spring semester		
Required B.S. course work		5
BNFO 601	Integrated Bioinformatics	4
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
Term Hours:		15
Fifth year		
Fall semester		
BNFO 531	Quantitative Methods in Bioinformatics	3
BNFO 690	Seminars in Bioinformatics	1
OVPR 601	Scientific Integrity	1
Graduate electives (500 and 600 level) ¹		5
Term Hours:		11
Spring semester		
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 700	Externship in Bioinformatics	2
Graduate electives (500 and 600 level) ¹		6
Term Hours:		11

1

For example: 500-level (or higher) BIOL, BIOC, BIOS, BNFO, CMSC, ENVS, HGEN, LFSC, STAT courses

Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical sciences

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences'

general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biological/genomic sciences, computational sciences or quantitative/statistical sciences through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program may contact the bioinformatics academic adviser at (804) 828-0825.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story
- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics
- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical sciences

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry. ¹		30
Major requirements		
• Major core requirements		
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 251	Phage Discovery I	2
BNFO 252	Phage Discovery II	2
BNFO 301	Introduction to Bioinformatics	3

BNFO 411	Ethical Issues in Life Sciences	2
BNFO 420	Applications in Bioinformatics	3
CHEM 102	General Chemistry II	3
CHEZ 102	General Chemistry Laboratory II	1
CMSC 255	Introduction to Programming	4
STAT 321	Introduction to Statistical Computing	3
• Concentration requirements		
MATH 201	Calculus with Analytic Geometry II	4
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
STAT 314	Applications of Statistics	4
Select concentration electives from list below.		
9		
Ancillary requirements ¹		
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
MATH 200	Calculus with Analytic Geometry I	4
PHYS 207	University Physics I (either course satisfies general education AOI for scientific and logical reasoning)	4-5
or PHYS 201	General Physics I	
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3

Open electives

Select any course. 23-24

Total Hours 120

1

The ancillary courses fulfill 12 of the required 30 credits of general education, including fulfillment of the quantitative foundations requirement, the natural sciences breadth of knowledge requirement, and the maximum allowable nine credits of scientific and logical reasoning area of inquiry.

The minimum number of credit hours required for this degree is 120.

Concentration electives

Course	Title	Hours
BIOL 318	Evolution	3
BIOS 524	Biostatistical Computing	3
BNFO/MATH 380	Introduction to Mathematical Biology	4
BNFO 391	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 393	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 491	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 492	Independent Study (variable) ¹	1-4

BNFO 493	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics (variable) ¹	1-2
BNFO 497	Research and Thesis (variable) ¹	1-4
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
BNFO/BIOL 541	Laboratory in Molecular Genetics	2
BNFO 591	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
BNFO 593	Special Topics in Bioinformatics (variable) ^{1,2}	1-4
CMSC 256	Data Structures and Object Oriented Programming	4
CMSC 302	Introduction to Discrete Structures	3
MATH 211	Mathematical Structures	3
MATH 356	Graphs and Algorithms	3
STAT 309	Introduction to Probability Theory	3
STAT 403	Introduction to Stochastic Processes	3
STAT 421	Applied Statistical Computing Using R	3
STAT 425	Multivariate Statistics	3
STAT 441	Applied Statistics for Engineers and Scientists	3

1

May be taken only with adviser's permission

2

No more than 8 combined credits of BNFO 391, BNFO 393, BNFO 491, BNFO 493, BNFO 591, and BNFO 593 may apply toward concentration elective requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
BNFO 251	Phage Discovery I	2
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education AOI for scientific and logical reasoning)	1
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3

Term Hours: 15**Spring semester**

BIOL 152	Introduction to Biological Sciences II	3
BNFO 101	Introduction to Scientific Computing	1
BNFO 252	Phage Discovery II	2
CHEM 102	General Chemistry II	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		15
Sophomore year		
Fall semester		
BIOL 310	Genetics	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
CHEZ 102	General Chemistry Laboratory II	1
STAT 212	Concepts of Statistics (satisfies general education quantitative foundations)	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		16
Spring semester		
BNFO 301	Introduction to Bioinformatics	3
CMSC 255	Introduction to Programming	4
MATH 200	Calculus with Analytic Geometry I	4
Open electives		3
Term Hours:		14
Junior year		
Fall semester		
BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2
MATH 201	Calculus with Analytic Geometry II	4
STAT 314	Applications of Statistics	4
Open elective		2
Term Hours:		15
Spring semester		
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I (satisfies general education AOI for scientific and logical reasoning)	5
STAT 321	Introduction to Statistical Computing	3
Concentration elective		3
Term Hours:		15
Senior year		
Fall semester		
MATH 310	Linear Algebra	3
Concentration elective		3
Open electives		9
Term Hours:		15
Spring semester		
BNFO 420	Applications in Bioinformatics	3

Concentration elective	3
Open electives	9
Term Hours:	15
Total Hours:	120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. and M.S. in Bioinformatics in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 142 credits rather than the 154 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have a head start for pursuing careers in industry or continuing in an academic setting. The M.S. degree provides two tracks: (1) a thesis track with formal research experience and (2) a nonthesis (professional science master's) track combining business skills with an externship experience. This degree can lead to expanded job opportunities, greater potential for job advancement and higher starting salaries.

Admission to the program

Applicants to this accelerated program must have junior or senior status in VCU's B.S. in Bioinformatics program. Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours; an overall GPA of 3.0; and a GPA of 3.0 in bioinformatics degree course work. Applicants should have completed a substantial amount of course work toward the B.S. degree and maintained a strong academic record. Successful applicants would enter the accelerated program in the fall semester of their senior year and start the M.S. in the term after which they receive their bachelor's degree.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program immediately following completion of their junior year, but no later than July 1 of that year. Two reference letters (at least one from a bioinformatics faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the program director to the M.S. in Bioinformatics program during their junior year and before they have completed 90 credits toward the B.S. degree.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the

undergraduate bioinformatics adviser and the program director of the bioinformatics graduate program.

Degree requirements

The Bachelor of Science in Bioinformatics degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits may substitute for open electives, bioinformatics degree electives or concentration-specific requirements for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. For best alignment of these credits, students must plan ahead.

Examples of bioinformatics degree courses that may be taken as an undergraduate, once a student is admitted to the program, are:

Course	Title	Hours
BIOS 543	Graduate Research Methods I	3
BNFO 540	Fundamentals of Molecular Genetics	3
BNFO 541	Laboratory in Molecular Genetics	2
BNFO 592	Independent Study	1-9
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 692	Independent Study	1-9
CMSC 508	Database Theory	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
BIOL 300	Cellular and Molecular Biology	3
BNFO 411	Ethical Issues in Life Sciences	2
Required B.S. course work		10
Term Hours:		15
Spring semester		
BNFO 541	Laboratory in Molecular Genetics	2
PHYS 207	University Physics I	5
STAT 321	Introduction to Statistical Computing	3
Required B.S. course work		5
Term Hours:		15
Senior year		
Fall semester		
BNFO 540	Fundamentals of Molecular Genetics	3
CMSC 256	Data Structures and Object Oriented Programming	4
Required B.S. course work		8

Term Hours:		15
Spring semester		
Required B.S. course work		5
BNFO 601	Integrated Bioinformatics	4
BNFO 620	Bioinformatics Practicum	3
BNFO 621	Business and Entrepreneurship Essentials for Life Scientists	3
Term Hours:		15
Fifth year		
Fall semester		
BNFO 531	Quantitative Methods in Bioinformatics	3
BNFO 690	Seminars in Bioinformatics	1
OVRP 601	Scientific Integrity	1
Graduate electives (500 and 600 level) ¹		5
Term Hours:		11
Spring semester		
BNFO 653	Advanced Molecular Genetics: Bioinformatics	3
BNFO 700	Externship in Bioinformatics	2
Graduate electives (500 and 600 level) ¹		6
Term Hours:		11

¹

For example: 500-level (or higher) BIOL, BIOC, BIOS, BNFO, CMSC, ENVS, HGEN, LFSC, STAT courses

Center for Environmental Studies

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The undergraduate and graduate programs in environmental studies are interdisciplinary in nature, exposing students to the critical links between the areas of environmental life sciences, technology and policy.

At the undergraduate level, students gain the necessary skills for entry-level field and research positions. Class lectures and guest speakers introduce the importance of policy-making and awareness in the environmental field, while laboratory and internship experiences provide a working knowledge of the latest in environmental technology and field practices.

The graduate programs provide two options for students to further their studies in the environmental life sciences. The Master of Science in Environmental Studies is a thesis-based program designed for those individuals interested pursuing research in the environmental field. The Master of Environmental Studies (the non-thesis program) is a terminal,

two-year professional degree for individuals working in the private/public sector of the environmental field.

- Environmental Studies, Bachelor of Science (B.S.) (p. 595)
- Environmental studies, minor in (p. 599)
- Outdoor Leadership, Certificate in (Baccalaureate certificate) (p. 598)
- Sustainable Innovation, Certificate in (Undergraduate certificate) (p. 599)

Environmental Studies, Bachelor of Science (B.S.)

The Bachelor of Science in Environmental Studies requires a minimum of 120 credits.

Along with the general education requirements of VCU Life Sciences, this curriculum requires 32-33 credits in core science and mathematics courses and 37-38 credits in environmental studies core courses.

Student learning outcomes

Upon completing this program, students will be able to demonstrate the following:

- Relate the principles and interconnections of environmental science and policy
- Demonstrate the ability to use basic environmental skills within the research processes
- Demonstrate a knowledge of basic biological concepts and their integration
- Demonstrate a knowledge of basic ecological concepts and integration
- Demonstrate a knowledge of basic earth science concepts and their integration

Special requirements

The Bachelor of Science in Environmental Studies requires a minimum 2.0 cumulative average in all major course work and a minimum of 34 credits of upper-level (e.g., 3XX, 4XX, or 5XX) approved courses. To meet the University Core capstone (Tier III) requirement, students are required to complete ENVS 499 and an additional course as approved by the unit. This additional course credit will count toward the electives for this major.

Degree requirements for Environmental Studies, Bachelor of Science (B.S.)

Course	Title	Hours
General education (p. 77)		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
Major requirements		
• Major core requirements		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 317	Ecology	3

CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
ECON 325	Environmental Economics	3
ENVS 101	Introduction to Environmental Studies I	3
ENVS 102	Introduction to Environmental Studies II	3
ENVS 222	Electronic Portfolios	1
ENVS/POLI 311	Politics of the Environment	3
ENVS 321	Cartography	3
ENVS 330	Environmental Pollution	3
ENVS 343	Data Literacy	4
ENVS 355	Water	3
ENVS 401	Meteorology and Climatology	3
ENVS 499	Environmental Studies Capstone Experience	0

• Additional major requirements

ENVS 105 or URSP 204	Physical Geology Physical Geography	3
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• Major electives

Select from list below.	12
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Ancillary requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	1
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
PHYS 201 or PHYS 207	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning) University Physics I	4-5
STAT 210 or STAT 212	Basic Practice of Statistics Concepts of Statistics	3

Open electives

Select any course.	28
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Total Hours	120
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The minimum number of credit hours required for this degree is 120.

Possible major electives

Select any ENVS or ENVZ course or choose from the courses listed below.

Course	Title	Hours
BIOL 103	Global Environmental Biology	4
BIOL 307	Aquatic Ecology	3
BIOL 312	Invertebrate Zoology	3
BIOL 313	Vertebrate Natural History	3
BIOL 314	Animal Reproduction	3

BIOL 320	Biology of the Seed Plant	4
BIOL 321	Plant Development	3
BIOL 322	Economic Botany	3
BIOL 324	Medicinal Botany	3
BIOL 332	Environmental Pollution	3
BIOL 333	Evolution of the Angiosperms	3
BIOL 335	Global Change Biology	3
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL 403	Primateology	4
BIOL 411	Physiology	3
BIOL 415	Mangrove Avian Field Ecology	4
BIOL 416	Ornithology	3
BIOL 422	Forest Ecology	4
BIOL 423	Plant Physiology	3
BIOL 425 Play course video for Field Botany	Field Botany	3
BIOL 430	Invasion Biology	3
BIOL 431	Introduction to Marine Biology	3
BIOL 459	Infectious Disease Ecology	3
BIOL 480	Animal-Plant Interactions	3
BIOL 497	Ecological Service Learning	1
BIOL 498	Insects and Plants Service-learning	2
BIOL 507	Aquatic Microbiology	4
BIOL 508	Barrier Island Ecology	3
BIOL 510	Conservation Biology	3
BIOL 512	Plant Diversity and Evolution	4
BIOL 514	Stream Ecology	4
BIOL 516	Population Genetics	3
BIOL 518	Plant Ecology	4
BIOL 519	Forest Ecology	4
BIOL 520	Population Ecology	3
BIOL 521	Community Ecology	3
BIOL 522	Evolution and Speciation	3
BIOL 535	Wetlands Ecology	4
BIOL 545	Biological Complexity	3
BIOL 550	Ecological Genetics	3
BIOZ 307	Aquatic Ecology Laboratory	1
BIOZ 312	Invertebrate Zoology Laboratory	1
BIOZ 313	Vertebrate Natural History Laboratory	1
BIOZ 317	Ecology Laboratory	2
BIOZ 324	Medicinal Botany Laboratory	1
BIOZ 416	Ornithology Laboratory	2
ENGL 368	Nature Writing	3
POLI 386	Environmental Security	3
SOCY 350	Environmental Sociology	3
SOCY 420	Environmental Racism	3
URSP 332	Environmental Management	3
URSP 545	Sustainable Energy Policy and Planning	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		
ENVS 101	Introduction to Environmental Studies I	3
ENVS 222	Electronic Portfolios	1
MATH 141	Algebra with Applications	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education courses		6
Term Hours:		17
Spring semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
ENVS 102	Introduction to Environmental Studies II	3
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
Term Hours:		14
Sophomore year		
Fall semester		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
Open elective		3
Term Hours:		14
Spring semester		
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
ENVS 105 or URSP 204	Physical Geology or Physical Geography	3
STAT 210	Basic Practice of Statistics	3
Open electives		5
Term Hours:		15
Junior year		
Fall semester		
BIOL 317	Ecology	3
ENVS/POLI 311	Politics of the Environment	3
ENVS 330	Environmental Pollution	3

PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
Open elective		2
Term Hours:		15
Spring semester		
ENVS 321	Cartography	3
ECON 325	Environmental Economics	3
ENVS 355	Water	3
General education course		3
Major electives		3
Term Hours:		15
Senior year		
Fall semester		
ENVS 343	Data Literacy	4
ENVS 499	Environmental Studies Capstone Experience (taken with capstone appropriate corequisite)	0
Major electives		6
Open electives		5
Term Hours:		15
Spring semester		
ENVS 401	Meteorology and Climatology	3
Major elective		3
Open electives		9
Term Hours:		15
Total Hours:		120

The minimum number of credit hours required for this degree is 120.

Accelerated B.S. and M.Envs.

The accelerated B.S. and M.Envs. program allows qualified students to earn both the B.S. in Environmental Studies and the Master of Environmental Studies in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.Envs. degrees. Thus, the two degrees may be earned with a minimum of 141 credits rather than the 153 credits necessary if the two degrees are pursued separately.

Admission to the program

Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours, an overall GPA of 3.0 and a GPA of 3.3 in courses required by the environmental studies major. Successful applicants would enter the accelerated program in the fall semester of their senior year.

Undergraduate students must have departmental approval to participate in an accelerated program and must apply for admission to the master's program prior to beginning their final year of full-time undergraduate study. The entry term for the master's program will be the next available admission term following the last semester of undergraduate study. Admission to the master's program is provisional until the undergraduate degree has been conferred. Upon completion and conferral of the undergraduate degree, students are fully admitted to the master's program.

It is recommended that candidates submit applications for admission to the accelerated program during the beginning of the spring semester of their junior year, but no later than Feb. 1. Two reference letters (at least one from an environmental studies faculty member) must accompany the application. Students who are interested in the accelerated program should consult with the program director to the master's program during their junior year and before they have completed 90 credits toward the B.S. degree.

Once admitted into the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress (<http://bulletin.vcu.edu/academic-regs/grad/satisfactory-academic-progress/>)" section of the Graduate Bulletin, including maintaining a 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate environmental studies adviser and the faculty adviser to the graduate program.

Degree requirements

The Bachelor of Science in Environmental Studies degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. Six of these graduate credits will be allowed to substitute for required undergraduate courses.

Shared graduate class	Undergraduate requirements fulfilled	Credits
ENVS 543	ENVS 343 Data Literacy	3
ENVS 550 Ecological Risk Assessment	ENVS 330 Environmental Pollution	3

The remaining six credits may be chosen from the approved list below. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

Course	Title	Hours
ENVS 521	Introduction to Geographic Information Systems	3
ENVS 591	Topics in Environmental Studies	1-4
ENVS 601	Survey in Environmental Studies	3
ENVS 603	Environmental Research Methods	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year. List of approved graduate electives are found on the graduate program bulletin for the M.Envs. program.

Course	Title	Hours
Junior year		
Fall semester		
BIOL 317	Ecology	3
ENVS 311	Politics of the Environment	3

ENVS 330	Environmental Pollution	3
ENVS 521	Introduction to Geographic Information Systems	3
PHYS 201	General Physics I	4
Term Hours:		16
Spring semester		
ECON 325	Environmental Economics	3
ENVS 543	Environmental Data Literacy (satisfies ENVS 343 requirement)	3
Major elective		4
Open electives		5
Term Hours:		15
Senior year		
Fall semester		
ENVS 499	Environmental Studies Capstone Experience (taken with capstone appropriate corequisite)	0
ENVS 550	Ecological Risk Assessment (satisfies ENVS 330 requirement)	3
ENVS 601	Survey in Environmental Studies	3
Major electives		3
Open electives		3
University Core course (humanities/fine arts)		3
Term Hours:		15
Spring semester		
ENVS 401	Meteorology and Climatology	3
ENVS 411	Oceanography	3
ENVS 603	Environmental Research Methods	3
Open electives		6
Term Hours:		15
Fifth year		
Fall semester		
OVPR 601	Scientific Integrity	1
ENVS 692	Independent Study	3
or ENVS 693	Internship in Environmental Studies	
Graduate electives (500 and 600 level)		8
Term Hours:		12
Spring semester		
Graduate electives (500 or 600 level)		9
Term Hours:		9

Outdoor Leadership, Certificate in (Baccalaureate certificate)

The Certificate in Outdoor Leadership is designed to prepare undergraduate students for work in a variety of professional outdoor experiential leadership positions. Course work focuses on the development of core competencies in outdoor leadership and students will gain experience through hands-on leadership opportunities, case studies and field activities.

Student learning outcomes

1. Articulate foundational theory as it relates to the study of outdoor leadership

2. Develop effective leadership processes and management strategies as they relate to leading in the outdoor context
3. Demonstrate technical skills as they relate to planning, preparing and leading in the outdoors

Certificate requirements

Admission to the program

Admission to this certificate program requires completion of a minimum of 30 credit hours of accredited undergraduate course work and a minimum cumulative GPA of 2.5. International students will need evidence of English language proficiency based upon satisfactory scores for the Test of English as a Foreign Language (minimum 550 from paper or 80 via internet), Pearson Test of English (53 or better) or the International English Language Testing System (6.0 or better). Students may earn this certificate either concurrently or independently with a baccalaureate degree program at the university.

Curriculum requirements

The 12-credit core curriculum will focus on educating students in the theory, processes and skills required for advanced careers in the field of outdoor recreation and education. Students will gain experience through hands-on leadership opportunities, case-studies, field time, lecture, structured feedback and guided inquiry. Course work will focus on outdoor leadership core competencies, foundational knowledge, self-awareness and professional conduct, decision- and judgment-making, teaching and facilitation, environmental stewardship, program management, safety and risk management, and technical expertise. Students may take an optional elective as noted below; these courses may add one to four credits to the certificate.

Course	Title	Hours
Core courses		
ENVS 260	Outdoor Leadership	3
ENVS 360	Outdoor Programming and Event Management	3
ENVS 361	Outdoor Team Building and Group Facilitation	3
ENVS 460	Wilderness First Responder	3
Optional electives		
ENVS 491	Topics in Environmental Studies	1-4
ENVS 492	Independent Study	1-3
Total Hours		12

Degree-seeking students may take courses in conjunction with their regular course load. Students attending full time can complete the certificate in one academic year (two semesters). Students attending part time and maintaining a course load of six credit hours per semester will complete the program in two years (four semesters). Students may take an optional elective (ENVS 491 or ENVS 492), which may add one to four credits to the certificate.

Year one

Fall semester	Hours
ENVS 260 Outdoor Leadership	3
ENVS 361 Outdoor Team Building and Group Facilitation	3
Term Hours:	6

Spring semester

ENVS 360	Outdoor Programming and Event Management	3
ENVS 460	Wilderness First Responder	3
Term Hours:		6
Total Hours:		12

Sustainable Innovation, Certificate in (Undergraduate certificate)

The Certificate in Sustainable Innovation is designed to provide students in any VCU baccalaureate program the option of adding a formal certificate program in sustainability and sustainable approaches to problem-solving. The Certificate in Sustainable Innovation will use a systems-thinking approach to problems of sustainability across all of the academic disciplines.

Admissions

Applications are available through the Center for Environmental Studies [Trani Center for Life Sciences, Room 105; (804) 828-7202]. Completed applications must be received by March 15 of each year.

Admission requires a minimum 2.8 grade point average. Students with fewer than 60 credits will be given priority for admission to the certificate program. Provided, however, transfer students may apply during their first year of admission to VCU and will receive equal priority to applicants with fewer than 60 credits. For transfer students, grade point average will be a compilation of grade points from transfer credits and courses taken at VCU.

Applicants are required to include a 500-word personal statement explaining their interest in the certificate. Applications will be reviewed by at least three members of the Sustainability Academics Leadership Team subcommittee on curriculum. All students meeting the admission requirements will be placed in a lottery to fill available positions in the program.

Curriculum

Gateway course: 3 credits

ENVS 300 Sustainable Societies: James River Basin

Sustainability electives: 12 credits

Students should choose from courses with the sustainability attribute. An updated list of these courses is available from the Center for Environmental Studies or may be accessed each semester by searching the Schedule of Classes with Attribute Type, Sustainability.

Culminating practical experience: 3 credits

Students will complete the Certificate in Sustainable Innovation by fulfilling a 400-level directed research project/independent study or internship. The project or internship may be in any discipline, but a proposal must be approved in advance by the director of the certificate program as meeting the learning outcomes for the certificate.

Additional requirements

Students in the certificate program will be required to maintain a portfolio for the duration of the program in which they will summarize their elective courses and describe how each course meets the goals of the certificate program. The portfolio also will include a product from their culminating practical experience.

The minimum total of credit hours required for this certificate is 18.

Environmental studies, minor in

The minor in environmental studies provides an overview of the field that offers an intrinsically interesting way for many students to organize elective course work while gaining knowledge important to life in the contemporary world. This program is structured to provide a multidisciplinary introduction to biophysical and social factors that affect the quality of life through the study of the scientific knowledge, policy considerations and ethical issues that constitute environmental issues. When combined with the appropriate major, an environmental studies minor can be useful to students planning careers in any area concerned with environmental processes and problems. The minor also may prepare students for study at the graduate level in concentrations such as ecology and environmental systems.

The minor in environmental studies consists of 21 credits. Required courses are listed. Electives to complete the minor may be selected from ENVS-listed courses and from courses in related departments. Consult the environmental studies program coordinator or adviser for course approvals. At least one course must be taken from the natural sciences and one course from the social sciences. Of the 21 credits, 15 must be outside the student's major department. Twelve credits must be at the 300 level or higher.

Required courses for the minor

Course	Title	Hours
Required courses		
ENVS/POLI 311	Politics of the Environment	3
ENVS 321	Cartography	3
STAT 210	Basic Practice of Statistics	3
or STAT 208	Statistical Thinking	
or STAT 212	Concepts of Statistics	
or SCMA 301	Business Statistics I	
Electives		
Approved ENVS or related courses ¹		12
Total Hours		21

¹

Consult the program academic adviser for course approvals.

UNIVERSITY COLLEGE

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Mission of the University College

University College empowers all VCU students to think critically and practice civic responsibility by promoting agency, academic success, career achievement, lifelong learning and active engagement in a diverse society. University College values our faculty and staff who dedicate their time and energy to this work.

University College offers first-year students an innovative, cohort-based first-year seminar experience, UNIV 111 and UNIV 112, designed around critical thinking, curiosity and shared learning opportunities. By providing students with a common experience, these courses help make the first year of college more engaging and meaningful, providing a strong foundation for further learning at VCU and beyond. A third course, UNIV 200, follows this first-year seminar and has a special focus on inquiry and the craft of argument. UNIV 200 empowers students to ask great questions and build well-researched, carefully argued answers in an academic learning context.

University College is also the home of the interdisciplinary studies program, offering the Bachelor of Interdisciplinary Studies for students who want to design their own majors, either by combining two minors or by working with program faculty and other VCU faculty to build a completely individualized major. A required introductory course, UNIV 301, and capstone course, UNIV 499, provide B.I.S. students with a creative, project-based opportunity to bring together all of their varied work within the interdisciplinary studies program. The University College also houses the interdisciplinary career readiness skills minor and the academic courses of the Transform living-learning program.

Goals and objectives of University College

The goal of the UC is to promote the personal and academic success of each student through curricular innovation, interdisciplinary studies and support for excellence in learning. The objectives are:

- To increase opportunities for active learning through innovative learning opportunities within and beyond the classroom
- To provide an innovative, cohort-based first-year seminar experience for VCU students (UNIV 111 and UNIV 112) as well as a course emphasizing research, argumentation and effective communication in multiple modalities (UNIV 200)
- To provide an individualized majors program, the Bachelor of Interdisciplinary Studies, that offers a creative, rigorous and rewarding learning experience for both traditional and nontraditional students

- To empower students to be self-directed, lifelong learners who will take advantage of every opportunity for learning and support for learning at VCU and beyond

General information

Academic departments and degree programs

Department of Focused Inquiry

Bachelor of Interdisciplinary Studies (B.I.S.)

Other programs

- The VCU Common Book Program
- Interdisciplinary career readiness skills minor
- Transform living-learning program
- Undergraduate teaching assistants (Focused Inquiry)

Department of Focused Inquiry

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Melissa C. Johnson, Ph.D.

Professor and chair

Michael Abelson

Associate professor and associate chair

The purpose of the Department of Focused Inquiry is to cultivate in all VCU students the skills, knowledge and attitudes needed for collegiate and lifelong success through learning-centered experiences; to foster an environment of collaboration among its faculty; and to encourage excellence in the practice and scholarship of teaching and learning. Faculty members are specialists in a range of disciplines and are dedicated to engaging students in curricular material that prepares them to become advanced thinkers in their majors, to be engaged citizens and to thrive as innovative and adaptable professionals.

The department offers small, seminar-style classes for first- and second-year students as part of the foundations of learning in the general education program at VCU. All courses are designed to cultivate curiosity and critical thinking through a rigorous, process-oriented shared curriculum grounded in experiential and problem-based learning. First-year students in UNIV 111 and UNIV 112 focus on developing skills in communicative fluency, ethical reasoning, global and cultural responsiveness, information literacy and problem solving in a collaborative learning environment, remaining with the same classmates and instructor for both courses and exploring a shared course theme. In UNIV 200 students further hone their skills by developing an inquiry project through a semester-long collaborative process of questioning, researching, writing, reflecting and revising in a variety of modalities.

The department also offers five other interdisciplinary courses: Food for Thought (UNIV 211), The Truth About Lying (UNIV 213), Finding Your Voice in Contemporary Society (UNIV 217), Pseudoscience (UNIV 222) and What's the Big Idea? (UNIV 299). UNIV 299 fulfills the diversities in the human experience area of inquiry requirement and the humanities/ fine arts breadth of knowledge requirement within VCU's general

education program. All of these courses have received REAL Level 2 designation.

Teaching assistant programs

Undergraduate teaching assistant program

The undergraduate teaching assistant program (offered in UNIV 250 and UNIV 251) provides successful Focused Inquiry students the opportunity to engage in experiential education and real-world applications of their FI course work through collaboration, mentorship and reflection and to earn service-learning credit. UTAs work in the Focused Inquiry classroom, modeling successful student behavior and adding a crucial layer of support that helps both their students and their faculty mentors. The UTA program courses are designated as service learning and REAL Level 3.

Graduate teaching assistant program

The Focused Inquiry GTA program provides VCU graduate students the opportunity to gain valuable teaching experience and professional development. The highly structured program includes mentorship and guidance toward the goal of developing teaching expertise in a two-step process. In the first phase of the program, GTAs shadow sections of UNIV 111 and UNIV 112 or UNIV 200 taught by an assigned faculty mentor. In the second phase, GTAs either teach their own section of UNIV 111 and UNIV 112 or UNIV 200 or work on a research, professional development or departmental service project under the guidance of a faculty member. As a result, GTAs have a strong track record in the unit as highly committed, effective teachers of the UNIV courses. GTA positions are funded through the Graduate School and the Department of English.

Interdisciplinary Studies, Bachelor of (B.I.S.) [University College]

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ids.vcu.edu (<http://ids.vcu.edu/>)

The Bachelor of Interdisciplinary Studies is an individualized and interdisciplinary degree for students who wish to create an individualized curriculum not available in traditional curricular pathways within existing VCU degree programs. Students in the Interdisciplinary Studies Program

are able to design an individualized degree compatible with academic, career or personal goals.

The IDS declaration process

To apply to the IDS Program, students should:

- Have learning goals that are suited to an interdisciplinary program of study
- Meet with an IDS adviser
- Complete the IDS application documents, including the detailed proposed curricular plan and rationale for interdisciplinary study, in consultation with their IDS adviser, and submit the application for review

Students interested in the Bachelor of Interdisciplinary Studies design their own curricula in consultation with an IDS adviser. The IDS advisers and faculty work closely with students to develop an appropriate curricular program and provide guidance on the application process. Each student's plan must define a specific focus area that combines two or more areas of study and must define their educational goals by designing their interdisciplinary curricula from a variety of course offerings.

The proposed interdisciplinary curriculum plan will be evaluated by an IDS adviser and program administrators before final approval by the director. Each application will be evaluated based on compliance with university degree requirements as well as IDS curriculum and individualized program requirements. After admission to the IDS Program, students will follow an approved individualized curriculum plan. The finalized curriculum plan is the official record of the student's degree requirements. This document records all transfer credits applicable to the B.I.S. degree and lists the courses required to complete the degree.

Individualized program requirements

Curriculum requirements

Course	Title	Hours
General education (p. 77)		
Select 12 credits from general education foundations and 18 credits from areas of inquiry.		30
Major requirements ¹		
UNIV 301	Interdisciplinary Theory and Practice	3
UNIV 499	BIS Senior Capstone	3
Approved relevant upper-level courses		18
Approved relevant courses, any level		15
Open electives		
Select any course.		51
Total Hours		120

1

The individually designed interdisciplinary focus area requires a minimum of 39 semester credits, 24 of which must be upper-level credit. The focus area has to combine at least two areas of study; one way to accomplish this is to complete the requirements for two minors as designated in the Undergraduate Bulletin. All interdisciplinary studies focus areas must include the interdisciplinary theory course (UNIV 301) and the senior capstone course (UNIV 499). UNIV 301 is the pre- or corequisite for UNIV 499. Students are expected to take UNIV 499 during their final semester of study, except under special circumstances.

The minimum number of credit hours required for this degree is 120.

Other requirements

The curriculum plan must also meet the following university policies and degree requirements:

- At least 12 credits must be taken in the focus area after acceptance into the program.
- Interdisciplinary studies majors are required to participate in assessment activities (e.g., focus groups and exit surveys) as determined by the Interdisciplinary Studies Program. Assessment information is used to assist faculty in evaluating program effectiveness.
- Students have a variety of credit options, including CLEP examinations, credit for formal military training and credits for certain professional certifications when they do not duplicate college course work.

Interdisciplinary career readiness skills, minor in

The minor consists of 18 credit hours of course work, at least nine of which must be at the upper-level. An overall GPA of 2.0 in all courses counted toward the minor is required. No course may be used to fulfill both a minor requirement and a university general education requirement.

At least 50 percent of the content of all courses approved for inclusion within the ICS minor will address the relevant NACE competency or competencies. Approved courses will include significant assignments that will require students to develop or demonstrate the appropriate competency or competencies.

In general, a student must complete three credits in each category identified below, with the exception of the professionalism/career management category, selected from a list of approved courses. Courses should be selected in consultation with the minor adviser, who is a member of the University College Interdisciplinary Studies advising team. To complete the requirements of the professionalism/career management category, a student must successfully complete UNIV 450 and two additional credits. In some of the minor categories, a student may substitute an internship, co-op, undergraduate research, study abroad or other REAL experience (Level III-IV) for the required three credits, or the experience itself may be assigned 0 credits (e.g., COOP 398). In such a case, the student must complete three additional credits from the remaining categories. Students should discuss such substitutions with the minor adviser prior to enrolling in the substitute course.

Course	Title	Hours
ICS area		
	Critical thinking/problem solving	3
	Digital technology	3
	Global/intercultural fluency ¹	3
	Oral/written communications	3
	Professionalism/work ethic/career management ¹	2
	Teamwork/collaboration/leadership ¹	3

UNIV 450	Career Readiness Synthesis (required; counts toward professionalism/work ethic/career management area)	1
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Total Hours 18

1

These areas may be satisfied with an approved experience. If the approved experience is assigned 0 credits (e.g., COOP 398) students must take three additional credits from the remaining categories.

Course	Title	Hours
Critical thinking/problem solving		
INNO 460	Product Innovation: da Vinci Project	3
MATH 300	Introduction to Mathematical Reasoning	3
PHIL 201	Introduction to Ethics	3
PHIL 212	Ethics and Applications	3
PHIL 221	Critical Thinking	3
PHIL 222	Logic	3
PHIL 230	Reason, Science and the Self	3
PHIL 250	Thinking About Thinking	3
SEDP 415	Action Research in Education and Special Education: Capstone Project	3
SLWK 200	Building a Just Society	3
UNIV 211	Food for Thought	3
UNIV 213 Play course video for The Truth About Lying	The Truth About Lying	3
UNIV 222	Pseudoscience	3
UNIV 299	What's the Big Idea?	3
VNTR 300	Venture Creation Skills	3
VNTR 460	Venture Creation Project	3
Digital technology		
CMSC 101	Introduction to Computer Science	3
CMSC 210	Computers and Programming	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
INFO 166	Digital Literacy: Database Skills	1
INFO 168	Digital Literacy: Presentation Skills	1
INFO 202	Introduction to E-business Technologies	3
CREA 202	Creative Coding	3
CREA 330	Interdisciplinary Web Design	3
Global/intercultural fluency		
AFAM 200	Introduction to African Societies	3
ARTH 207	Global Art History	3
ARTH 245	Survey of Asian Art	3
ARTH 260	Islamic Art Survey	3
ARTH 261	Islamic Art Survey	3
ENGL 201	Western World Literature I	3
ENGL 202	Western World Literature II	3

ENGL 363	African Literature	3	ENGR 398	Cooperative Education Experience	0
ENGL 365	Caribbean Literature	3	ENGR 399	Cooperative Education Experience II	3
ENGL 381	Multiethnic Literature	3	FIRE 301	Personal Financial Planning	3
FRLG 493	World Languages Internship	1-3	GVPA 100	Making Policy Real: Social Problems and Policy Solutions	3
HIST 101	Survey of European History	3	GVPA 423	Virginia Capital Semester Seminar	3
HIST 102	Survey of European History	3	GVPA 494	Virginia Capital Semester Internship	3
HIST 105	Survey of African History	3	HCMG 300	Health Care Organization and Services	3
HIST 106	Survey of African History	3	LFSC 101	Academic and Career Options in Life Sciences	1
HIST 107	Survey of East Asian Civilizations	3	PSYC 201	Career Development in Psychology	2
HIST 108	Survey of East Asian Civilizations	3	UNIV 103	Education and Career Planning	1-3
HIST 109	Survey of Latin American History	3	UNIV 250	Undergraduate Teaching Assistant Program	1
HIST 110	Survey of Latin American History	3	UNIV 251	Undergraduate Teaching Assistant Program	1
IDDS 200	Disability History and Culture	3	UNIV 303	Interdisciplinarity in the Professional World	3
SEDP 202	Preparing Diverse Learners From Multicultural and Global Perspectives	3			
GLED 101	Introduction to VCU Globe	1			
GLED 202	Global Engagement Seminar	1			
GLED 302	Preparing for Global Leadership Seminar	1			
GLED 401	VCU Globe Senior Capstone	1			
GLED 493	Global Leadership Practicum	1-3			
Approved international REAL level 3-4 experience			Approved REAL level 3-4 experience		
Oral/written communications			Teamwork/collaboration/leadership		
BUSN 225	Winning Presentations	3	CMST 300	The Foundations of Community Engagement	3
BUSN 325	Organizational Communication	3	CREA 450	Creative Disruption	3
ENGL 304	Persuasive Writing	3	ENVS 260	Outdoor Leadership	3
ENGL 310	Professional Writing	3	ENVS 360	Outdoor Programming and Event Management	3
ENGL 388	Professional, Scientific and Technical Writing	3	HCDN 351	Introduction to Human-centered Design	1-3
INNO 460	Product Innovation: da Vinci Project	3	HCDN 353	Human-centered Design Through Service Learning	2
SPCH 121	Effective Speech	3	HONR 170	Humans of RVA and VCU	1
SPCH 321	Speech for Business and the Professions	3	INNO 460	Product Innovation: da Vinci Project	3
UNIV 217	Finding Your Voice in Contemporary Society	3	LDRS 200	Profiles in Leadership	1
VNTR 460	Venture Creation Project	3	LDRS 201	Leadership Identity	1
Professionalism/work ethic/career management			LDRS 202	Leadership Context	1
ALHP 310	Introduction to Health Care Professions	3	LDRS 301	Leadership Engagement	1
BUSN 201	Foundations of Business	3	LDRS 302	Culminating Leadership Seminar	1
BUSN 323	Legal Environment of Business	3	LDRS 491	Special Topics in Leadership	1-3
COOP 298	Cooperative Education Experience	0	LFSC 307	Community Solutions: Multiple Perspectives	3
CLED 405	A Survey of Career Counseling	3	MGMT 310	Managing People in Organizations	3
CMST 310	Orientation to Service-learning	1.5	MGMT 319	Leadership	3
CMST 410	Service-learning Teaching Assistant Supervision	1.5	MILS 102	Military Science and Leadership: Foundations of Agile and Adaptive Leadership	1
CMST 411	Advanced Service-learning Teaching Assistant Supervision	1	MILS 201	Military Science and Leadership: Leadership and Decision Making	2
COOP 398	Cooperative Education Experience	0	PSYC 307	Community Solutions: Multiple Perspectives	3
CREA 201	The Creative Economy	3	SCMA 350	Introduction to Project Management	3
CREA 350	Piloting the Enterprise	3	SEDP 405	Collaborative Practices and Co-teaching in Inclusive Schools	3
ENGL 367	Writing Process and Practice	3	SEDP 420	Special Education Leadership for Inclusive Schools	3
ENGR 296	Part-time Internship Experience	0	UNIV 350	Peer Leadership Program	3
ENGR 396	Internship Experience	0			

VNTR 300	Venture Creation Skills	3
VNTR 460	Venture Creation Project	3
Approved REAL level 3-4 experience		

Living-learning community programs

VCU offers two sponsored living-learning programs at the undergraduate level designed to allow students to enjoy an immersive experience in a particular area and earn a certificate of completion. Through a combination of coordinated interdisciplinary course work, cocurricular activities and a residential experience, over a two-year commitment, students gain a breadth and depth of learning that prepares them to be world-ready.

VCU INNOVATE uses academic course work and cocurricular activities to enhance the experience of students enrolled in the Certificate in Product Innovation and/or the Certificate in Venture Creation. Students enroll in four one-credit courses over a two-year residency and complete a portfolio in order to fulfill the certificate of completion.

VCU Transform (p. 604) is a living-learning program dedicated to the development of current and future leaders through academic course work and cocurricular activities. The vision of VCU Transform is to cultivate servant leaders who transform lives and impact communities locally and globally.

VCU Transform

VCU Transform is a living-learning program dedicated to the development of current and future leaders through academic course work and cocurricular activities. The vision of VCU Transform is to cultivate servant leaders who transform lives and impact communities locally and globally.

Certificate of completion

Students who are accepted into VCU Transform will develop their skills and knowledge over the course of the two-year program through a prescribed balance of activities and experiences. Students fulfilling the following requirements will be recognized by receiving a Certificate of Completion in Leadership Studies and Experiential Learning.

- Live in the designated living-learning community residence hall for all years of the program
- Maintain a minimum 2.0 cumulative GPA while enrolled in VCU Transform
- Complete UNIV 200 with a minimum grade of C
- Achieve a minimum 2.5 GPA in required VCU Transform courses (REAL 300, REAL 301, REAL 310, REAL 400 and REAL 401)
- Complete a minimum of 60 hours (20 hours in each of the following categories): co-curricular leadership, service and intercultural competence
- Complete an immersive experiential learning pathway in one of six areas including: internships, study abroad, undergraduate research, peer leadership, community engagement and entrepreneurship
- Submit a culminating e-portfolio
- Deliver a final symposium presentation/demonstration of learning
- Participate in LLP special events
 - Program orientation
 - Program completion
 - Others as deemed necessary by the LLP leadership

The certificate of completion includes an academic component consisting of nine to 12 credit hours of course work to be completed during the two-year VCU Transform program.

Year one		Hours
Fall semester		
REAL 300	Principles of Community-engaged Leadership	3
Term Hours:		3
Spring semester		
REAL 301	Leadership Identity and Intercultural Competence	3
Term Hours:		3
Year two		
Fall semester		
REAL 310	Pathways to Experiential Learning (or external course) ¹	1
REAL 400	Career Management	1
Term Hours:		2
Spring semester		
REAL 401	Capstone Seminar	1
Term Hours:		1
Total Hours:		9

¹

Must be taken before spring semester of second year.

VCU Leaders Engaging in Advanced Discovery living-learning program

With the spirit of innovation in mind, in fall 2021, the VCU ASPIRE, VCU Globe and VCU LEAD living-learning programs will merge into VCU Transform. Learn more about VCU Transform (p. 604).

VCU LEAD is a living-learning program dedicated to the development of current and future leaders through academic course work and cocurricular activities. The vision of VCU LEAD is to cultivate world-class innovative leaders who transform lives and impact communities.

Certificate of completion

Students who are accepted into VCU LEAD will develop their leadership skills and knowledge over the course of the two-year program through a prescribed balance of activities and experiences. Students fulfilling the following requirements will be recognized by receiving a Certificate of Completion in Leadership Studies.

- Reside in the Grace and Broad Residence Center for all years of the program
- Maintain a minimum 2.0 cumulative GPA while enrolled in VCU LEAD
- Complete UNIV 200 with a minimum grade of C
- Achieve a minimum 2.5 GPA in required leadership studies courses (LDRS 201, LDRS 202, LDRS 301, LDRS 302 and UNIV 270)
- Demonstrate experience in organizational leadership through engagement in VCU student organizations, student life programs and/or community agencies

- Complete at least 40 leadership hours and 40 hours of service in the community over their two years in the program
- Submit a leadership e-portfolio

The certificate of completion includes an academic component consisting of 10 credit hours of course work to be completed during the two-year VCU LEAD program.

Year one

Fall semester		Hours
LDRS 201	Leadership Identity	1
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		4

Spring semester

LDRS 202	Leadership Context	1
UNIV 270	Introduction to Leadership Studies	3
Term Hours:		4

Year two

Fall semester

LDRS 301	Leadership Engagement	1
Term Hours:		1

Spring semester

LDRS 302	Culminating Leadership Seminar	1
Term Hours:		1
Total Hours:		10

Application process

Students of all majors with an interest in leadership are sought for admission to the VCU LEAD living-learning program. Full-time students may apply for admission to VCU LEAD during the fall semester of their freshman or sophomore years. Seniors who have two more years of undergraduate studies may petition the director for admission to the program. In addition to completing the admission application for VCU LEAD, students must complete a housing contract to reside in VCU LEAD for two consecutive years.

Successful applicants will demonstrate leadership potential and a commitment to personal and professional growth. The admissions committee will consider the thoroughness and merit of responses to application questions as well as the level of commitment exhibited in the application to actively engage in curricular, cocurricular and residential program elements for the two-year program.

Certificate completion process

All VCU LEAD scholars must complete the curricular, cocurricular and residential requirements for the Certificate of Completion in Leadership Studies on schedule in the intended progression. Students who fail to satisfy the program requirements, including living in VCU LEAD housing, will be removed from the program. Students failing to meet program requirements also may be removed from VCU LEAD housing and relocated to another residence hall. Students are expected to uphold VCU, VCU LEAD and community partner expectations for personal and professional conduct at all times. Any behavior that violates standards of conduct (<http://www.students.vcu.edu/studentconduct/student-code-of-conduct/>) may result in removal from the program and VCU LEAD.

Students who complete all of the above listed requirements will be awarded the Certificate of Completion in Leadership Studies. Program staff members monitor student progress for all VCU LEAD scholars.

However, it is the responsibility of each student to monitor their own program of study and seek assistance when needed. A program adviser is available to all students. Regular communication with the program leadership is critical to the successful completion of all program requirements.

DA VINCI CENTER FOR INNOVATION

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Garret Westlake
Executive director

A collaboration of VCU's schools of the Arts, Business, Engineering and College of Humanities and Sciences, the VCU da Vinci Center is a unique collegiate model that advances innovation and entrepreneurship through cross-disciplinary collaboration.

The academic and other program offerings of the da Vinci Center aim to create T-shaped individuals: individuals who are anchored in a discipline and have the capacity and openness to span across disciplines.

Students participating in the da Vinci Center view innovation and entrepreneurship from multiple disciplinary perspectives and, thus, are prepared for the 21st-century workforce by more robustly approaching the innovation/entrepreneurship endeavor.

- Product Innovation, Certificate in (Undergraduate certificate) (p. 607)
- Venture Creation, Certificate in (Undergraduate certificate) (p. 609)

VCU Innovate

Grace and Broad Residence Center 2
1010 West Grace Street
Richmond, Virginia 23220
(804) 827-1859
innovate@vcu.edu
innovate.vcu.edu (<http://www.innovate.vcu.edu/>)

Somiah Lattimore
Director

Garret Westlake
Executive director, da Vinci Center

Mission

The mission of the da Vinci Center Innovate Living-Learning Program is to equip innovative student entrepreneurs with a human-centered design foundation to launch new ventures or products through academic course work and co-curricular activities.

Curriculum standards

The da Vinci Center Innovate living-learning program curriculum is designed to provide students with knowledge and skills necessary for employment in a wide range of industries valuing human-centered design. Topics of study include design thinking, problem solving, user experience and interface design, rapid prototyping, innovation, and an entrepreneurial mindset. This knowledge and these skills are coupled with VCU degrees from the schools of the Arts, Business and Engineering, as well as the College of Humanities and Sciences.

- **Course work:** Students receive a Certificate of Completion in Human-centered Design comprising a minimum of nine undergraduate da

Vinci credits and engage in experiential client interaction during their two-year residency.

- **Co-curricular hours:** Students fulfill 60 hours of activities ranging from trips to guest lectures and workshops.
- **Service hours:** Students complete 20 hours of service through a nonprofit client interaction built into their academic course work.
- **Residency:** Students live in the Grace and Broad Resident Center 2 for a two-year term.

Learning outcomes

Upon the successful completion of the da Vinci Center Innovate living-learning program, students will be able to:

- Discover innovative and appropriate ideas using a human-centered design process
 - **Head** (eager, creative, analytic)
- Communicate ideas through visual and verbal stories told with passion and empathy
 - **Heart** (passionate, empathetic, brave)
- Execute ideas using the right tools and technologies\
 - **Hands** (relevant, maker, inventive)

Certificate of completion

Students completing the da Vinci Center Innovate living-learning program receive a nine-credit Certificate of Completion in Human-centered Design, which requires a sequence of the following three tailored one-credit hour courses over a two-year required residency coupled with five credits of da Vinci Center approved electives.

Course	Title	Hours
Required courses		
HCDN 351	Introduction to Human-centered Design	1
HCDN 352	Human-centered Design Methods	1
HCDN 353	Human-centered Design Through Service Learning	2
Approved electives		
Select five credits from the following:		5
HCDN 451	Interaction Design and Prototyping	
HCDN 452	Professional Practices	
HCDN 491	Special Topics in Human-centered Design	
HCDN 492	Independent Study in Human-centered Design	
HCDN 493	Internship in Human-centered Design	
INNO 200	Introduction to Innovation and Venture Creation	
INNO 221	Introduction to Arts and Design Principles	
INNO 223	Introduction to Business Principles	
INNO 225	Introduction to Engineering and Technology Principles	
INNO 491	Special Topics in Product Innovation	

INNO 492	Independent Study in Product Innovation
VNTR 300	Venture Creation Skills
VNTR 491	Special Topics in Venture Creation
VNTR 492	Independent Study in Venture Creation
Total Hours	9

HCDN 351 is taken in the first semester and HCDN 352 is taken in the second semester during the first year of residency. Students take HCDN 353 in the first semester of the second year, with the remaining five credits of da Vinci approved electives completed throughout the two-year residency, as mapped out and approved between the da Vinci adviser, Innovate director and the student resident.

Certificate of completion process

All VCU Innovate scholars must complete the curricular, co-curricular and residential requirements for the Certificate of Completion in Human-centered Design on schedule in the intended progression.

- Commit to a two-year residency in the Grace and Broad Residence Center 2.
- Complete the nine-credit Certificate of Completion in Human-Centered Design.
- Complete 60 hours of co-curricular activities and 20 hours of service.

Students who fail to satisfy the program requirements, including living in VCU Innovate on-campus housing, will be removed from the program. Students failing to meet program requirements also may be removed from VCU Innovate housing and relocated to another residence hall. Students are expected to uphold VCU, VCU Innovate and community partner expectations for personal and professional conduct at all times. Any behavior that violates standards of conduct (<http://www.students.vcu.edu/studentconduct/student-code-of-conduct/>) may result in removal from the program and VCU Innovate.

Application process

Students with professional or personal interest, commitment and a passion for innovation and entrepreneurship are sought as residents in the VCU Innovate living-learning program. Full-time VCU students from all majors may apply for the program during their freshman or sophomore years. Rising juniors and seniors with two more years of undergraduate studies remaining may petition the director for entry.

The application deadline is posted on the VCU Innovate website, innovate.vcu.edu (<http://www.innovate.vcu.edu>). In addition to completing the admissions application, students must complete a housing contract for the Grace and Broad Residence Center 2 over two consecutive years.

For more information email or call the VCU Innovate living-learning program office at innovate@vcu.edu or (804) 827-1859.

Product Innovation, Certificate in (Undergraduate certificate)

The Certificate in Product Innovation allows undergraduate students to develop competency in the area of product innovation.

Employing a cross-disciplinary perspective that embodies concepts from arts, design, business, engineering, and humanities and sciences, students receive a robust learning experience that leads to an understanding of the challenges associated with and means for managing product design, product development and new-product introduction endeavors.

The Certificate in Product Innovation program runs concurrently with a student's major and is not a stand-alone program. In order to participate in the program, students must have a declared major in the schools of the Arts, Business, Engineering, the College of Humanities and Sciences, or another VCU unit that is an official partner of the da Vinci Center.

Students participating in this program will learn how to:

- Collaborate successfully: Students will demonstrate successful collaborative skills by learning how to work in teams, manage team conflict and organization and apply these learnings in real teaming situations.
- Develop product concepts: Students will demonstrate the ability to develop and test effective product concepts and prototypes.
- Think across disciplines: Students will demonstrate the ability to think across disciplines through taking courses outside their main area of study and working on teams with students from various backgrounds.
- Use effective verbal and oral communication: Students will be prepared to effectively express product innovation ideas and views in both verbal and written forms. Students will also be able to effectively communicate using verbal presentations and written executive reports.

Students should apply to the program during or after taking the introductory course, INNO 200. Interested students should submit their application to the VCU da Vinci Center which administers the certificate program. Upon acceptance to the certificate program, a Change of Major form will be signed by the student and submitted to Records and Registration by the VCU da Vinci Center.

Certificate requirements

Students with majors in the School of the Arts, School of Business and College of Engineering take the two non-discipline electives outside their major and two discipline-specific electives from within their major. Students from outside the schools of the Arts, Business and College of Engineering must take all three non-discipline electives and one discipline-specific elective. Note INNO 223 is usually offered only in the spring semester.

A minimum grade of C is required in each course that applies to the certificate.

The certificate requires a minimum of 16 credit hours of approved course work as follows:

Course	Title	Hours
INNO 200	Introduction to Innovation and Venture Creation	1
Select two courses from the following non-discipline electives: ¹		6-9
INNO 221	Introduction to Arts and Design Principles	
INNO 223	Introduction to Business Principles	

or ECON 205	The Economics of Product Development and Markets	
or MKTG 301	Marketing Principles	
INNO 225	Introduction to Engineering and Technology Principles	
Select two discipline-specific electives (approved 300- or 400-level courses in the major) ²		3-6
INNO 460	Product Innovation: da Vinci Project ²	3
Total Hours		16

1

Choose the courses offered on the subjects outside the major; students from outside the Schools of the Arts, Business, and Engineering must take all three non-discipline electives.

2

Students may take only one discipline-specific elective course while enrolled in INNO 460. Students from outside the Schools of the Arts, Business and Engineering are required to take only one discipline-specific elective, since they take nine credits of non-discipline electives.

The minimum total of credit hours required for this certificate is 16.

Electives

Note that elective choices are discipline-specific by major.

Course	Title	Hours
Core discipline electives		
School of the Arts		
COAR 311	Type and Image	
COAR 321	Sequential Imaging	
COAR 332	Digital Drawing	
COAR 433	Game Design, Theory and Practice	
COAR 450	Business of Communication Arts	
CREA 300	Idea Accelerator	
CREA 350	Piloting the Enterprise	
CREA 393	Design Ops Internship	
CRAF 320	Furniture Design	
CRAF 351	Intermediate Glass Fabrication/Hot	
CRAF 362	Intermediate Textiles: Pattern Weaving	
FASH 341	Merchandise Planning and Control	
FASH 343	Fashion Forecasting	
FASH 401 & FASH 402	Design II Studio and Design II Studio	
FASH 493	Fashion Internship	
GDES 308	Web Design	
GDES 321	Core Studio III	
GDES 330	The Business of Design	
GDES 343	Systems in Design	
GDES 347	Interaction I	
GDES 356	Studio Management	
GDES 380	Multi Studio I	
GDES 418	Design Center	
GDES 492	Design Internship	
IDES 301	Interior Design Studio I	

IDES 312	Advanced Interior Graphics II
IDES 324	Furniture Design
IDES 431	ID Business Practices
IDES 491	Topics in Interior Design
KINE 308	Web Technologies for Media Artists
PAPR 421	Drawing, Advanced
SCPT 322	Flexible Molds

School of Business

BUSN 323	Legal Environment of Business
ECON 305	Public Finance
INFO 361	Systems Analysis and Design
MGMT 319	Leadership
MGMT 321	Survey of Entrepreneurship
MKTG 310	Marketing Research
MKTG 330	Integrated Marketing Communications
MKTG 430	Experiential Marketing
MKTG 450	Product Development and Management
SCMA 350	Introduction to Project Management

College of Engineering

CMSC 355	Fundamentals of Software Engineering
CMSC 401	Algorithm Analysis with Advanced Data Structures
EGRB 301	Biomedical Engineering Design Practicum
EGRB 307	Biomedical Instrumentation
EGRB 401	Biomedical Engineering Senior Design Studio
EGRB 402	Biomedical Engineering Senior Design Studio
EGRB 421	Human Factors Engineering
EGMN 300	Mechanical Systems Design
EGMN 309	Material Science for Engineers
EGMN 420	CAE Design
EGMN 402 & EGMN 403	Senior Design Studio (Laboratory/Project Time) and Senior Design Studio (Laboratory/Project Time)

College of Humanities and Sciences

BIOL 496	Biology Preceptorship: ____
CHEM 310	Medicinal Chemistry and Drug Design
ENGL 310	Professional Writing
ENGL 388	Professional, Scientific and Technical Writing
INTL 320	International Marketing
INTL 327	Introduction to Intercultural Communication
INTL 418	International Management
INTL 446	International Human Resource Management
MASC 300	Technical Prowess
MASC 301	Graphics for Journalism
MASC 334	Visual Communication and Design for Public Relations
MASC 367	Beginning Media Production

MASC 415	Advanced Media Production
MASC 425	Public Relations Research Methods
MASC 451	Invention
MASC 485	Web Site Design
PHYS 307	The Physics of Sound and Music
POLI 331	Public Administration
POLI 374	Financial Management for Nonprofits
PSYC 308	Stress and its Management
PSYC 310	Industrial Psychology
PSYC 317	Experimental Methods
UNIV 301	Interdisciplinary Theory and Practice
UNIV 499	BIS Senior Capstone

The program director for product innovation will approve all course work intended to satisfy any elective requirements for the undergraduate Certificate in Product Innovation.

Sample plan of study

Note that classes are taken in conjunction with major course work; see curriculum outline for discipline-specific electives. Students should work with their da Vinci adviser to set a plan of study that best aligns with their major course work.

Year one

Fall semester		Hours
INNO 200	Introduction to Innovation and Venture Creation	1
Term Hours:		1
Spring semester		
INNO 221	Introduction to Arts and Design Principles ¹ or Introduction to Business Principles ¹	3
INNO 223		
Discipline-specific elective (approved 300- to 400-level course in the major) ²		3
Term Hours:		6

Year two

Fall semester		Hours
INNO 221	Introduction to Arts and Design Principles ^{1,3} or Introduction to Engineering and Technology Principles ^{1,3}	3
INNO 225		
Discipline-specific elective (approved 300- to 400-level course in the major) ²		3
Term Hours:		6
Spring semester		
INNO 460	Product Innovation: da Vinci Project ⁴	3
Discipline-specific elective (approved 300- to 400-level course in the major) or third non-discipline elective ²		3
Term Hours:		3
Total Hours:		16

1

Arts, business and engineering majors choose the non-discipline electives appropriate to their major area as described in curriculum

outline. H&S and other majors take all non-discipline electives. Note INNO 223 is usually offered only in the spring semester.

2

Students from outside the Schools of the Arts, Business and Engineering are required to take only one discipline-specific elective, since they take nine credits of non-discipline electives.

3

Engineering majors choose INNO 221; all others select INNO 225.

4

Students may take only one discipline-specific elective course while enrolled in INNO 460.

The minimum total of credit hours required for this certificate is 16.

For more information, contact the student services coordinator for the VCU da Vinci Center at (804) 827-3764 or davincicenter@vcu.edu.

Venture Creation, Certificate in (Undergraduate certificate)

Open to all VCU undergraduate students, the Certificate in Venture Creation focuses on developing a multidisciplinary mindset for successful entrepreneurialism and venture creation. Students participating in the program will hone understandings of the challenges, skills and resources necessary for venture creation, and through an immersive culmination experience, integrate these understandings around conceiving, planning and implementing a real venture.

Learning outcomes

The VCU Certificate in Venture Creation enables students to learn and do entrepreneurship. Students participating in this program will:

1. Develop a venture creation mindset
2. Effectively identify and address strategies to overcome venture creation challenges
3. Apply venture creation skills to create, plan and implement a venture
4. Effectively communicate through written and oral methods

The Certificate in Venture Creation program runs concurrently with a student's major and is not a stand-alone program. Students should apply to the program during or after taking the introductory course, INNO 200. Interested students should submit their application to the VCU da Vinci Center, which administers the certificate program. Upon acceptance to the certificate program, a Change of Major form will be signed by the student and submitted to Records and Registration by the VCU da Vinci Center.

Certificate requirements

A minimum grade of C is required in each course that applies to the certificate.

The certificate requires a minimum of 13 credit hours of approved course work as follows:

Course	Title	Hours
INNO 200	Introduction to Innovation and Venture Creation	1

VNTR 300	Venture Creation Skills	3
VNTR 460	Venture Creation Project	3
Two discipline-specific electives (unless otherwise specified in the list below, only approved 300- or 400-level courses may apply)		6
Total Hours		13

The minimum number of credit hours required for this certificate is 13.

Electives

Note that elective choices are discipline-specific by major.

Course	Title	Hours
For students pursuing a major in the School of the Arts		
CREA 300	Idea Accelerator	3
CREA 350	Piloting the Enterprise	3
CREA 393	Design Ops Internship	1-6
For students pursuing a major in the School of Business		
BUSN 400	Principles of Consulting	3
FIRE 313	Financial Management for Small Business	3
MGMT 321	Survey of Entrepreneurship	3
For students pursuing a major in the College of Engineering		
CMSC 451 & CMSC 452	Senior Project I and Senior Project II	6
EGRB 401 & EGRB 402	Biomedical Engineering Senior Design Studio and Biomedical Engineering Senior Design Studio	6
ENGR 402 & ENGR 403	Senior Design Studio (Seminar) and Senior Design Studio (Seminar)	2
All other students		
ACCT 202	Accounting for Non-business Majors	3
ECON 203	Introduction to Economics	3
FIRE 311	Financial Management	3
MGMT 321	Survey of Entrepreneurship	3
MKTG 301	Marketing Principles	3
UNIV 301	Interdisciplinary Theory and Practice	3
UNIV 499	BIS Senior Capstone	3

The program director for venture creation will approve all course work intended to satisfy any elective requirements for the undergraduate Certificate in Venture Creation.

Sample plan of study

Note that classes are taken in conjunction with major course work; see curriculum outline for discipline-specific electives.

Year one

Fall semester		Hours
INNO 200	Introduction to Innovation and Venture Creation	1
Term Hours:		1

Spring semester

VNTR 300	Venture Creation Skills	3
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Discipline-specific elective	3
Term Hours:	6

Year two

Fall semester

Discipline-specific elective	3
Term Hours:	3

Spring semester

VNTR 460	Venture Creation Project	3
Term Hours:		3
Total Hours:		13

The minimum number of credit hours required for this certificate is 13.

For more information, contact the student services coordinator for the VCU da Vinci Center at (804) 827-3764 or email davincicenter@vcu.edu.

OFFICE OF RESEARCH AND INNOVATION

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research.vcu.edu (<http://www.research.vcu.edu>)

P. Srirama Rao, Ph.D.

Vice president for research and innovation

The mission of the Virginia Commonwealth University Office of Research and Innovation is to create an environment that enables university investigators to: 1) effectively compete for research funding, 2) responsibly conduct research in compliance with mandated policies and 3) broadly disseminate knowledge gained and discoveries made.

Research universities provide the nexus of discovery, education and service. The research process evolves into scholarly publication, enlightening histories, interpretative arts, lifesaving drugs and remarkable innovations ranging from nanotechnology to macroeconomics. Each day VCU researchers make progress toward improving quality of life and understanding of the world around us.

Research at VCU provides an incubator for training new scholars and a new generation of students who understand where and how knowledge is formed. No matter their chosen career, all researchers benefit from the curiosity instilled and the recognition that learning is a lifelong process.

The research enterprise at VCU has made substantial forward steps in recent years, doubling the sponsored award base, renovating laboratories, rebuilding the research subjects' protection program and investing in state-of-the-art animal care equipment and facilities.

The VCU Office of Research and Innovation seeks to partner with faculty in all schools and departments as they seek funding, plan studies, establish collaborations, calculate budgets, submit grant applications, negotiate industry contracts and secure patents and licensing agreements. Skilled staff within each of the major divisions — sponsored programs administration, research subjects protection, animal research, technology transfer, industry partnerships, and education and oversight — look forward to helping VCU faculty in all realms of the research process.

Affiliated research institutes include the Center for Clinical and Translational Research (and its Research Incubator), the Institute for Drug and Alcohol Studies, the Philips Institute for Oral Health Research, the Virginia Institute for Psychiatric and Behavioral Genetics, the Institute for Structural Biology and Drug Discovery and the Institute for Women's Health.

Center for Clinical and Translational Research

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(804) 628-2961
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cctr.vcu.edu (<https://cctr.vcu.edu/>)

F. Gerard Moeller, M.D.

Director

The Wright Center for Clinical and Translational Research at VCU provides the necessary longitudinal and cross-disciplinary network, culture and infrastructure for identifying promising discoveries made in the laboratory, testing them in animals and developing trials and studies for humans.

Joint participation of researchers from across the university is critical to this mission. Partnerships with foundations and industry — particularly the support of the Virginia BioTechnology Research Park — is also crucial for moving these discoveries to the clinic. At the same time, mutually beneficial partnerships with community practitioners, community organizations and patients enhance the adoption of evidence-based best practices in general clinical practice and thus deliver improved medical care to the region.

The Wright Center offers a corridor in which participants in the translational research continuum can meet, interact and advance each others' missions. Bench and computer scientists will learn from animal models and clinician observations. Clinical researchers will recognize the need for communication with basic scientists to direct experimental design. Community practitioners will better understand their role in informing the clinical research process and participating in pragmatic clinical trials. Patients will develop a higher comfort level with "medical research."

The center also serves as the administrative unit for the interdisciplinary graduate degrees in clinical and translational sciences.

Research Innovator

The Wright Center's Research Innovator is designed to serve as a hub for resources and networking opportunities for established researchers and junior clinical investigators who are working on novel, interdisciplinary and collaborative clinical research at VCU. The RI will support its investigators by coordinating and optimizing current resources and by developing innovative new resources to facilitate the research process. It is anticipated that faculty researchers from the schools of Dentistry, Education, Medicine, Nursing, Pharmacy and Social Work, as well as the colleges of Engineering, Health Professions, and Humanities and Sciences will access services at the RI.

GRADUATE SCHOOL

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F. Douglas Boudinot, Ph.D.

Dean

Graduate programs are administered by the individual departments, schools and centers with assistance from the Graduate School. Major coordination of the various degree programs is performed by the University Graduate Council, which is chaired by the dean of the Graduate School. The University Graduate Council comprises two elected faculty members from each school and one elected faculty member from VCU Life Sciences.

The Graduate School section of the VCU Bulletins documents the official admission and academic rules and regulations that govern graduate education at the university. The University Graduate Council determines these policies.

Bulletins and course descriptions for the current and past years are now archived in the VCU Scholars Compass (<http://scholarscompass.vcu.edu/vcubulletins/>) hosted by the VCU Libraries.

Graduate programs

In-depth descriptions of all graduate programs at VCU are provided in the individual school and program sections of this bulletin. The Graduate School website (<http://www.graduate.vcu.edu>) provides links and contact information for all graduate programs offered at VCU. The website also provides updates that occur throughout the academic year, as well as the Application to Graduate Study and complete instructions for applying to all graduate programs.

Refer to the program index for a complete listing of all graduate programs, as well as application deadline dates, and special admission requirements and contact information. Applicants are encouraged to contact the school/department sponsoring the intended program of study at the telephone numbers and/or email addresses provided. Other important contact information is provided on the Graduate School (<http://www.vcu.edu/graduate/>) website as well.

DIVISION OF STRATEGIC ENROLLMENT MANAGEMENT AND STUDENT SUCCESS

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sem@vcu.edu
semss.vcu.edu (<http://www.semss.vcu.edu>)

Tomikia LeGrande, Ed.D.

Vice president for strategy, enrollment management and student success

The Division of Strategic Enrollment Management and Student Success (<http://www.sem.vcu.edu/>) provides primary oversight for the recruitment, retention and graduation of students at all levels. The purpose of the division is to ensure academic quality and student success, which is dependent upon the recruitment, retention and timely graduation of a talented and diverse student body. The division's goals and aspirations are clearly articulated in the university's strategic plan, and a primary component of that vision is to ensure that the university attracts and retains students who will graduate at a higher rate and who will contribute to a highly skilled 21st-century workforce.

Within the division there are several operational areas: Admissions, Adult and Non-Traditional Student Services, Campus Learning Center, Career Services, Financial Aid, Intersession, Military Student Services, Records and Registration, Student Accounting, Student-Athlete Support Services, the Student Financial Management Center, Summer Studies and Special Programs, the Transfer Center, Trio Student Support Services, University Academic Advising, and the Writing Center.

For more information, please visit the Division of Strategic Enrollment Management and Student Success (<http://www.semss.vcu.edu/>) website.

DIVISION OF STUDENT AFFAIRS

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Charles Klink, Ph.D.
 Senior vice provost for student affairs

The Division of Student Affairs comprises departments promoting the intellectual, cultural, personal, social, moral, financial, physical and psychological development of Virginia Commonwealth University students. The division provides administrative support for key policies of the university, including the VCU Honor System and the University Rules and Procedures. Visit the Division of Student Affairs (<https://students.vcu.edu/>) online for updated information throughout the year.

Departments, offices and programs

Dean of Students Office

Staff members in the dean's office help students chart a path toward success, overcome barriers and ensure support services are being utilized. Visit the DOS website (<https://dos.vcu.edu/>) for additional information.

New Student and Family Programs

NSFP provides support for students and their families to help with the transition to college life. Visit the NSFP website (<https://nsfp.vcu.edu/>) for additional information.

Office of Multicultural Student Affairs

The OMSA features cultural programs, discussion groups, student organizations, scholarship opportunities and much more in an effort to strengthen the university's sense of community through cultural appreciation. Visit the OMSA website (<https://omsa.vcu.edu/>) for additional information.

Office of Student Conduct and Academic Integrity

This office supports the educational mission of the university by educating students about appropriate behavior and fostering a community supporting academic success. Visit their website (<https://conduct.students.vcu.edu/>) for more information.

Rams in Recovery

Rams in Recovery is VCU's collegiate recovery program which works to ensure that students do not have to choose between their recovery and their education. They support students inside and outside the classroom, organize events and trips, offer recovery housing and more. Visit the Rams in Recovery website (<https://students.vcu.edu/programs/recovery-support/>) for more information.

Recreation and Well-Being (RecWell)

The Division of Student Affairs is pleased to introduce VCU Recreation and Well-Being as a newly formed entity. The VCU Health Promotion and Well-Being Center (The Well) and Recreational Sports completed a semester-long integration process during the spring of 2021, to become one department that will better serve the health and well-being needs of the VCU community. RecWell will continue to provide a broad range of

programs and services that support student well-being, including group exercise, outdoor adventure, intramural sports, personal training and much more. Facilities are located on both the MCV and Monroe Park campuses. To participate in and learn more about those opportunities, visit the Rec Sports website (<https://recsports.vcu.edu/>) and the Health Promotion and Well-Being Center's website (<https://thewell.vcu.edu/>) for additional information.

Residential Life and Housing

This unit provides safe, inclusive and well-maintained facilities where intentional communities are built to empower residents in their academic excellence, citizenship and personal growth. See the Residential Life and Housing website (<https://housing.vcu.edu/>) for more information.

Student Accessibility and Educational Opportunity

Student Accessibility and Educational Opportunity assists students with disabilities registered for classes on the Monroe Park Campus to identify and utilize reasonable accommodations, supports and services. Visit the SAEO website (<https://saeo.vcu.edu/>) for more information.

Student Media Center

The Student Media Center (<https://studentmedia.vcu.edu/>) is dedicated to the support and encouragement of responsible, independent student media to connect, explore and enrich the lives of the university's many constituencies.

Technology Support Services

Technology Support Services provide technical support and services to the Division of Student Affairs staff through the DSA help desk and VCU students through the Resnet help desk. Students can use their eID to sign in to the LANDESK (<https://itsupport.vcu.edu>) for technology support.

University Counseling Services

UCS creates an environment that fosters student growth, development and psychological well-being through direct clinical service, education and prevention. Visit the UCS website (<https://counseling.vcu.edu/>) for more information.

University Student Health Services

USHS provides quality outpatient medical care and public health services, which also includes health education programming that empowers students to become full participants in their health care. Find more information on the USHS website (<https://health.students.vcu.edu/>).

University Student Commons and Activities

The facilities, services and programs of USCA, including Fraternity and Sorority Life, Student Government Association and Activities Programming Board, bring together all members of the VCU community and contributes to intellectual, emotional and social growth through informal interaction. Visit the USCA website (<https://usca.vcu.edu/>) for more information.

VCU Transform

VCU Transform (<https://students.vcu.edu/departments/leadership-and-involvement/vcu-transform/>) is the living-learning program open to undergraduate students of sophomore status or above. Students in the program will develop as local, national and global leaders through experiential learning in leadership studies, community engagement and global competency. Students who participate and complete the VCU

Transform living-learning program will receive a Certificate of Completion in Leadership Studies and Experiential Learning (p. 604).

Student government associations

The **VCU Student Government Association** is an elected body of students who are organized into three branches – executive, legislative and judicial – with various committees. Nonelected, at-large members are encouraged to join most of these committees. All meetings of the senate are open to the public. Visit the SGA website (<https://sga.vcu.edu/>) for more information.

The **Graduate Student Association** serves as an advocate for graduate students at VCU. It sponsors events such as meet-and-greets, monthly socials and the annual Graduate Research Symposium (<http://graduate.vcu.edu/research/symposium.html>) that are designed to enhance academic skills, provide professional development opportunities and facilitate an active social environment. The GSA and the Graduate School work together to assist students with travel costs for academic conferences. The GSA places students on campuswide committees to ensure concerns of graduate students are heard. Visit the Graduate School website (<http://www.graduate.vcu.edu/life/association.html>) for more information.

University policies and procedures

A number of policies and regulations at VCU affect students, and many of these are printed in the general information chapters of this bulletin. Two policy documents are of particular interest to students.

- **VCU Student Code of Conduct:** outlines the responsibilities of student conduct from the time of application for admission through the actual awarding of their degree
- **VCU Honor System:** defines academic dishonesty and provides a procedure for judging alleged violators of academic integrity

Each student is responsible for being familiar with the provisions of all university policies and regulations. The policy documents described above are available in the VCU Policy Library (<https://policy.vcu.edu/>), which is an excellent online resource.

GLOBAL EDUCATION OFFICE

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[global.vcu.edu \(http://www.global.vcu.edu\)](http://www.global.vcu.edu)

Jill Blondin, Ph.D.
 Executive director

The Virginia Commonwealth University Global Education Office advances the university's three global priorities:

- Improve the recruitment and retention of international students and scholars
- Increase the global engagement of VCU students and faculty
- Expand VCU's global footprint through research, teaching and service – especially as they impact global health

The Global Education Office is home to five units and programs that advance the internationalization of the university.

Units and programs

Education Abroad

GEO's study abroad office offers student advising and placement in a full range of programs abroad, as well as academic unit support in developing, operating and evaluating study abroad programs.

English Language Program

The fully accredited intensive English program offers beginner to advanced levels of academic preparation. This large and growing program concentrates on academic preparation and study skills that equip students for success in their educational and career pursuits.

Global Outreach

The global outreach team supports the university's academic units in identifying and pursuing global priorities within the context of Quest for Distinction by facilitating international institutional agreements, coordinating the universitywide Global Advisory Network, supporting international faculty development and providing funding opportunities for global initiatives.

International Student and Scholar Programs

This program offers students, scholars and visitors a full suite of services that include academic and immigration advising, student engagement activities and campus and community orientation. The program equips faculty and staff with expertise and tools to support international students and scholars through workshops, faculty academies and individualized pedagogical consulting.

VCU Globe: A global education living-learning community

One of only 25 Peace Corps Prep programs in the nation and recognized by the 2015 Senator Paul Simon Award for Innovation in International Education, VCU Globe prepares undergraduates in all majors to live and work in a 21st-century global environment. In addition to completing a rigorous, globally focused curriculum, students live together in the West

Grace North residence hall and participate in community-engagement and leadership-building activities.

Education Abroad

Stephanie Tignor
 Director
davenportse@vcu.edu

[global.vcu.edu/abroad \(http://global.vcu.edu/abroad/\)](http://global.vcu.edu/abroad)

Overview

VCU encourages students from every academic discipline to pursue part of their university education in an international setting by studying abroad. Education abroad benefits students academically, professionally and personally; students become more engaged in their academic field of study and often show stronger performance upon returning to campus from their study abroad experiences. Skills gained through education abroad help increase employment marketability upon graduation. Learn more about how Education Abroad experiences fulfill REAL (<http://bulletin.vcu.edu/undergraduate/undergraduate-study/real/>) initiative requirements.

Getting started

Students may study abroad for various lengths of time including summer, winter session, spring break, a semester or a full academic year as part of their degree program. VCU's program offerings range from independent to more supportive. The VCU Education Abroad office provides students with information, advising and support through the process of applying, preparing for and returning from education abroad.

Students who would like to learn more are encouraged to complete Rams Abroad 101 (<https://vcu.studioabroad.com/?FuseAction=Programs.ViewProgramAngular&id=11155>), a self-paced, informational video series on study abroad options and processes. Students may schedule advising with an Education Abroad adviser to receive support in selecting a program, getting courses approved, accessing financial aid and scholarships and preparing to go abroad.

Eligibility

Participants must be in good standing with the university (p. 24) in order to apply for and participate in education abroad programs. Additionally, students are typically required to have completed two semesters at VCU prior to studying abroad. Please note that individual program requirements may vary.

Credits

Except for specific VCU short-term programs offered for VCU credit, all credit received through study abroad will appear on the students' transcripts as transfer credit (p. 38).

- Students must earn the equivalent of a C, at minimum, for credit to be awarded.
- Grades are not calculated into the VCU GPA, unless a student is attempting to graduate with I (p. 30) audatory honors (p. 30).
- Students who participate in approved programs abroad are exempt from the 25 percent rule (p. 27), including the requirement that at least 30 of the last 45 credits are taken at VCU. Although students may be allowed to study abroad during their final year, they should

communicate with the Education Abroad office and their academic department to determine whether that is advisable.

- Students must complete the Education Abroad course approval process (https://vcu.studioabroad.com/?FuseAction=Abroad.ViewLink&Parent_ID=324C7870-5056-BA1F-73413AB6255E54F0&Link_ID=32A93CA5-5056-BA1F-7375575C7DE013A6) to determine how study abroad credits will transfer back to VCU. In conjunction with the Education Abroad adviser, students are encouraged to work with their academic adviser on these course approvals.
- Once students are registered with Education Abroad, they will be registered in a STUA (study abroad) placeholder until their foreign credits transfer back to VCU.
- Major advising sheets (https://vcu.studioabroad.com/?FuseAction=Abroad.ViewLink&Parent_ID=324C7870-5056-BA1F-73413AB6255E54F0&Link_ID=32B86134-5056-BA1F-7306BDCBCA01E37C) provide program recommendations for many undergraduate majors at VCU.

Funding

The Education Abroad team provides program options ranging in cost, including plentiful options comparable to the cost of studying at VCU.

- Financial aid (p. 53) is available to students when they study abroad.
- Many scholarship opportunities (https://vcu.studioabroad.com/?FuseAction=Abroad.ViewLink&Parent_ID=0&Link_ID=33AAF1BF-5056-BA1F-733E14854E4A320B) are available to students through VCU and external organizations.
- The National Scholarship Office (<https://www.nso.vcu.edu/>) supports students applying for nationally competitive scholarships such as the Benjamin A. Gilman International Scholarship, Boren Awards and Critical Language Scholarship Program.

Program offerings

VCU short-term study abroad

Each year VCU offers a variety of short-term program options which may occur during winter break, spring break and/or summer. Both faculty-led and direct-enroll (International Summer Institute) options are available. Participants can earn VCU and/or transfer credit and study subjects from various academic disciplines. New programs are created around the world annually.

VCU semester partnership direct-enroll and exchange options

VCU offers diverse programming through direct-enroll agreements with foreign partner institutions in a variety of destinations across the globe. VCU also negotiates student exchange agreements arising out of specific interest in the university community. For exchange options, students pay the equivalent of full-time tuition and fees at VCU and enroll at the chosen host university.

External programs

Students seeking alternatives to VCU short-term programs, direct-enroll and exchanges may consider external programs. Students may elect to participate in a program offered by a third-party organization such as a

foreign or domestic university or international education organization/provider. VCU Education Abroad can assist students in identifying and applying to external programs, maintaining their VCU status while away, and securing financial aid when possible and appropriate. Note: All external programs must offer transferable credit and be pre-approved by VCU Education Abroad in order to be approved by VCU.

Virtual programs

While there is no substitute for an in-country experience, virtual internships and classes offer a way to explore another culture, get specific experience not offered at VCU and gain invaluable intercultural, professional and academic skills. Virtual programs are accessible and affordable, allowing students to explore and engage globally from the comfort of their homes. Virtual internships and classes can be added to a student's existing on-campus or online course load at VCU.

English Language Program

Moe Greene, Ph.D.

Associate director

global.vcu.edu/elp (<http://global.vcu.edu/elp/>)

The English Language Program offers an intensive university-preparation language program for nonnative speakers of English and serves international students, U.S. citizens, permanent residents and refugees. Core courses are offered at three levels of instruction – beginning through advanced – in multiple sessions each year. Core courses include reading and writing and speaking and listening.

Students may apply directly to the English Language Program. Admission to the ELP may also be recommended by VCU Undergraduate Admissions and International Admissions at the time of the application review. Placement in the ELP is based on the results of an English Language Placement Exam, taken remotely or upon arrival in Richmond.

More information

For more information, students may contact the English Language Program office at 912 W. Grace St., by phone at (804) 828-2551, by fax at (804) 828-2552 or by email at geo-elp@vcu.edu.

Global Outreach

Jill Blondin, Ph.D.

Executive director, Global Education Office

global.vcu.edu/outreach (<http://global.vcu.edu/outreach/>)

The global outreach team supports the university's academic units in identifying and pursuing global priorities within the context of Quest 2025: Together We Transform by facilitating international institutional agreements, coordinating the universitywide global network and supporting international faculty development and global initiatives.

International Student and Scholar Programs

Paul Babbitts, Ph.D.

Associate director

Nichole Dorton

Student engagement coordinator

[global.vcu.edu/students](http://www.global.vcu.edu/students/) (<http://www.global.vcu.edu/students/>)

International students face many challenges when entering a new country. GEO's International Student and Scholar Programs offers assistance and guidance as students adjust to a different culture and pursue their educational goals.

Program advisers help with pre- and post-arrival concerns, such as immigration, academic preparation and registration, airport pick-ups, housing, banking, health insurance, and other orientation activities.

Support continues throughout an international student's stay at VCU. The International Student and Scholar Programs staff assists, advises and refers students with academic, immigration, personal, legal, health and cultural issues. Advisers also confer with VCU faculty, staff and university officials regarding student concerns.

International Student and Scholar Programs offers educational, cultural and social activities that promote international understanding and community. Some activities include Global Cafes, Conversation Partners, Friendship Families, visits to places such as Washington, D.C. and New York City and other trips, including camping and skiing.

For information or assistance, please contact International Student and Scholar Programs, Global Education Office, 912 W. Grace St., at (804) 828-8471, by fax at (804) 828-2552 or by email at geo@vcu.edu.

VCU Globe

With the spirit of innovation in mind, in fall 2021, the VCU ASPIRE, VCU Globe and VCU LEAD living-learning programs will merge into VCU Transform. Learn more about VCU Transform (p. 604).

VCU Globe: A global education living-learning community combines a global education curriculum with coordinated residential activities, experiential learning and leadership training through structured engagement in global communities on the VCU campus, in Richmond, Virginia, and abroad. Students learn about the challenges and opportunities that come with globalization and the unique potential of education to provide solutions; and they work collaboratively to identify problems and design interventions. Students move through the program in cohorts — sharing common courses, experiential learning activities and cocurricular programming. In the program, students expand their identities as global citizens and develop skills in leadership and teamwork both in global education and in their academic majors.

The curriculum of VCU Globe focuses on seminars and applied experiences in global education, engagement and leadership. Global education has emerged as an important element in higher education with the recognition that students and faculty live and work in increasingly globalized settings. Global educational themes and concepts inform general and disciplinary curricula at institutions across the U.S., and global education is an emerging discipline within its own right. Global engagement is the transformative experience of deeply interacting with people and ideas spanning the contemporary world. The ideas of global education and the experiences of global engagement form the foundation necessary for the development of sound global leadership skills, such as effective cross-cultural communication, multicomponent organization and program evaluation.

Overview

Orientation to VCU Globe occurs in the spring of freshman year when new students enroll in GLED 101. In the sophomore year, students are introduced to core concepts, including global education as a learning paradigm, the role of the “culture broker” in professional fields and the emerging idea of world citizenship. Students go on to explore definitions of culture and community in the contemporary world, global communication styles and skills, and sustainable asset-based development. In advanced courses in the junior year, students study emerging ideas of citizen-leadership, trans-community communication and organization, and the global commons. In all courses, students take ideas learned in the classroom and put them to use teaching English as a second language in local global communities, mentoring international and English language-learning peers on campus, working in a wide array of global community organizations in Richmond and abroad, and developing and leading independent community-service projects.

In all elements of the program, students are encouraged to identify ideas, themes and skills of particular relevance to their academic major and professional plans. VCU Globe faculty and advisers facilitate students' integration of global education content and experience with their majors.

VCU Globe collaborates with faculty and staff in the university's living-learning programs to hold joint events, offer reciprocal courses and share facilities to make the Grace Street Village a vibrant and engaged intellectual center of campus activity.

Certificate of completion

In order to graduate with a Certificate of Completion in Global Education, a student must:

- Complete GLED 101, GLED 201, GLED 202, GLED 301, GLED 302 and GLED 401, for a total of six credits
- Complete a GLED-only section of UNIV 200
- Complete at least three additional credits in GLED 391 or in a course approved by the VCU Globe Director
- Complete at least 40 hours of service work
- Demonstrate experience in cultural immersion
- Have a minimum 2.0 cumulative GPA at graduation
- Have a minimum 2.0 GPA in GLED courses at graduation
- Attend at least five VCU Globe cocurricular events each academic year
- Submit a curricular and cocurricular portfolio
- Students who wish to undertake further course work can enroll in GLED 493 following the completion of GLED 401; this course does not count toward the certification of completion in global education. Seniors selected for participation in GLED 493 exhibit a high level of professionalism, interpersonal sensitivity and strong communication skills, as well as demonstrated abilities in leadership and teamwork.

Students who present exceptional service or leadership, as demonstrated by the portfolios, the completion of at least 18 credits in the program, a minimum GPA of 3.5 in the program, and are members of the Honors College, may be awarded honors in global education at graduation.

Peace Corps Prep program

VCU Globe is a Peace Corps Prep (<http://www.global.vcu.edu/vcuglobe/peacecorpprep/>) program. Upon successful completion of all VCU Globe requirements and two years of a foreign language (eight-14 credits,

four semesters or equivalent placement) students can also receive a certificate of completion from the Peace Corps.

Special sections

Given the varied academic and professional interests of students in VCU Globe, the global education curriculum includes sections of GLED 391. These courses are taught by VCU Globe Faculty Fellows and include special global education sections of existing courses and specialized full-semester courses. These courses are intended to develop students' abilities crossing cultural and personal borders and to acquire such skills with reference to professional goals and plans. Courses focus on exposing students to a global range of individuals and groups of people, and students have direct and substantive contact with worldviews and experiences different from their own. Courses also seek to develop students' awareness of the skills required of a global citizen/culture broker within relevant professional fields. Classes may be designed for particular majors, but generally do not have advanced prerequisites, so that interested global education students from a variety of majors may enroll.

Service

Students must complete at least 40 hours of service work. The hours to be completed are part of core GLED course requirements. Service may be completed in a variety of campus and community, or even global, settings. On-campus opportunities include mentoring of international students and participating in the orientation of new international and English Language Program students. Service opportunities in the community include working with nonnative English-speaking children in local schools and ESL adults in community clinics. Cooperative agreements with organizations also serve to place students in community settings. Opportunities for students to participate in international community service projects are available with VCU's partnership universities and in conjunction with VCU faculty members.

Students beginning in the program engage in service activities on campus (with a high level of supervision) including helping with orientation programming for international students and English Language Program testing, as well as mentoring their peers on campus.

Included in both curricular and cocurricular programming are intensive and extensive training of all students to prepare them for their community service activities. This training includes explicit instruction on professional behavior and conduct, appropriate communication formats and styles, awareness of and sensitivity to the individuals and communities with whom they work, and the consequences of not behaving professionally and appropriately at all times when working in a service capacity. These themes are revisited often throughout VCU Globe's curriculum and cocurriculum.

Because of the nature of the service required of VCU Globe's students, all applicants must be able to pass a background check, which is necessary to work with students in local schools and in many other settings.

Cultural immersion

Cultural immersion refers to sustained, significant interaction with a new cultural group, during which a student exercises his/her abilities to empathetically observe and evaluate situations from the point of view of that cultural group's members. It requires developing a sense of cultural differences and similarities and a critical reflection of one's own cultural system. It may be demonstrated by one or more of the following:

- Proficiency in a foreign language equivalent to the intermediate level (through completion of a foreign language through the 202 level or equivalent through credit, placement testing or other demonstrated proficiency)
- Proficiency in English as a second language (through TOEFL score of at least 79, IELTS score of at least 6.0, VCU's English Language Program placement testing or completion of VCU's English Language Program)
- Completion of an approved study abroad program (with prior approval)
- Completion of an approved homestay program (with prior approval)
- Sustained substantive involvement in a global community organization at VCU or in the Richmond community (with prior approval)
- Completion of an international service project (with prior approval)
- Other experience with prior approval

A student's plan for fulfilling this requirement should be discussed at initial advising meetings, and progress toward completion should be reviewed at subsequent meetings.

Grading

The content, training and service required in global education courses is cumulative, so that a student who fails a course prerequisite to another course will be unable to continue in the program's curricular sequence. A student who fails a required GLED course may appeal according to the guidelines established in the university's grade review procedure and may register for and attend the next required course in the sequence pending the outcome of that review. The student should first discuss the grade in question with the faculty member who assigned the grade, that faculty member explaining how the grade was determined. If the student continues to feel that the grade was incorrectly assigned, a written appeal may be submitted to the director of VCU Globe. Students appealing grades assume the burden of proof. The appeal shall state and support with all available evidence the reasons why the student believes the grade should be changed. For grades awarded for the fall semester, the written intent to appeal must be submitted no later than 14 calendar days after the beginning of the spring semester. For grades awarded for the spring semester, the written intent to appeal must be submitted no later than 14 calendar days after the first day of the summer semester. For grades awarded for the summer semester, the written intent to appeal must be submitted no later than 14 calendar days after the first day of the fall semester. If the appeal is not granted, the student must drop or withdraw from the course. Students must pass all required GLED courses and must be making satisfactory progress in the service aspect of the curriculum (as determined by VCU Globe staff) in order to continue in the program from sophomore to junior year and junior to senior year. Residency contracts are subject to annual reviews of satisfactory progress.

The integration of the global education curriculum into the academic programs of students majoring in a wide variety of disciplines and engaging in significant community service requires significant advising resources. The director of VCU Globe works with global education faculty and VCU Globe staff to provide academic advising and community service placement and supervision, to supervise seniors engaged in practicum work and to liaise between VCU Globe and community organizations and service supervisors.

GLOBAL STUDENT SUCCESS PROGRAM

Lin Reed

Executive director

(888) 477-7828

llin2@vcu.edu

provost.vcu.edu/initiatives/gssp (<https://provost.vcu.edu/initiatives/gssp/>)

The goal of the Global Student Success Program, a partnership with global education provider Navitas, is to broaden the global experience for our students by focusing on the recruitment of talented international students.

An international pathway program, GSSP eases the transition to a U.S. university environment and prepares pathway students for future academic success at VCU.

Among the services that the program provides for international students are academic content, study skills development and high levels of social and academic support.

Students who successfully complete the program will then be eligible to continue their undergraduate or graduate studies at VCU.

THE HONORS COLLEGE

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 Richmond Virginia 23284-3010
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[honors.vcu.edu \(http://www.honors.vcu.edu\)](http://www.honors.vcu.edu)

Scott Breuninger, Ph.D.
 Dean

The Honors College offers highly motivated and high-achieving undergraduates a liberal arts college experience within the context of a large, urban, public research university. The Honors College is appealing to students from all majors who want to transcend disciplinary boundaries, be innovative and address big questions through classroom and, especially, experiential learning. With that in mind, the Honors College prepares students to be skilled communicators, critical thinkers and problems solvers. Further, students have opportunities to develop their understanding of language and culture locally and internationally, while also gaining a sense of social responsibility and a broad understanding of diversity and inclusion in the 21st century.

The center of activities for The Honors College is located at 701 W. Grace St., a living/learning, residential honors community. In this facility, students have meeting rooms, quiet study rooms, computers and recreational areas. This facility is open to honors students day and night for study.

Graduation with University Honors

The Honors College at VCU cultivates renaissance thinkers for the 21st century while creating an innovative, real-world approach to community engagement.

The honors curriculum runs concurrently with a student's program of study or degree requirements. In addition, dedicated honors advisers assist students in selecting courses that will fulfill graduation requirements and match students' interests. Further, in consultation with honors advisers, the honors cohort coordinator will assist students with completing their culminating capstone experience.

While most honors students enter college with significant writing experiences, the Honors College wants to build on those skills, working toward a true understanding of the critical thinking and reflection that must be a part of writing targeted toward professional audiences. The first-year writing program consists of two courses (HONR 200 and HONR 250) that emphasize those goals. Additionally, the Honors College fosters a diverse and inclusive community where all people are valued and differences are recognized as assets. Honors students will enter VCU having been placed in diverse, multidisciplinary "cohorts," which will be guided along a four-year path of community-based experiential learning, culminating with collaborative capstone projects that will have lasting value for the diverse Richmond community.

College is a time for growth and exploration, but it can also be a time of intense pressure and stress. Therefore, HONR 150 is a required first-year course, designed to teach students skills such as mindfulness practices that will help them to flourish throughout college and beyond.

To graduate with the distinction of University Honors, entering freshmen must successfully complete 22 approved credits, including

HONR 150, HONR 170, HONR 171, HONR 200, HONR 250, HONR 494 and courses of intention (nine credits, approved by the honors adviser). All entering freshmen must successfully complete HONR 200 and HONR 250, regardless of AP/IB/dual enrollment credits.

Continuing students entering the Honors College with 12 or more credits and transfer students entering with 12-53 credits must successfully complete 21 approved credits, including HONR 494 and courses of intention (nine credits, approved by honors adviser), in order to graduate with University Honors.

Transfer students entering with 54 or more credits from their transfer institution must complete 14 honors credits, including HONR 170, HONR 494 and courses of intention (nine credits, approved by honors adviser), in order to graduate with University Honors.

Freshmen entering with an associate degree must complete 22 credits, including HONR 150, HONR 170, HONR 171, HONR 200, HONR 250, HONR 494 and course(s) of intention (nine credits, approved by honors adviser), in order to graduate with University Honors.

Students must achieve a minimum grade of B in all honors courses, including courses of intention.

Engagement points

In addition to their course work, students must earn 25 engagement points per academic year. Honors students are expected to be actively engaged in the Honors College, throughout the university and in the Richmond community. The Honors College provides many ideas about ways to engage, but students also have the opportunity to define their engagement experience. Not only is honors engagement a requirement for graduation with University Honors, but it is also the key to receiving the highest consideration for honors-designated scholarships, study abroad, internships, events with alumni, the Honors Summer Undergraduate Research Program and other special opportunities. Engagement is categorized into five main areas: experiential learning, professional development, leadership, community engagement, and diversity and inclusion. Students are responsible for truthfully recording their participation.

The application process

Incoming first-year students with a combined minimum SAT score of 1330 (mathematics and critical reading) or a minimum ACT composite score of 29 and a minimum 3.5 unweighted high school GPA (4.0 scale) are eligible to apply. In addition to the VCU Common Application, prospective students must submit an Honors College application.

Current VCU students who have achieved a minimum 3.5 cumulative GPA in 12 to 53 semester hours of college credit are eligible to apply. Students with more than 53 credits may still apply, but they will need to provide a written explanation about how they plan to complete the curriculum. Transfer students who have earned 12 or more credits and have a minimum cumulative GPA of 3.5 are also eligible to apply.

Academic policies and requirements

- Students in the Honors College must maintain a minimum cumulative GPA of 3.5.
- Students must achieve a minimum grade point average of 3.2 in all honors course work, including courses of intention.

- Honors students should achieve a standard of excellence in general education as well as in their major field.

Special opportunities

The Honors College offers a number of opportunities to its student members. Among these are:

The Honors College Student Executive Board – an organization of Honors College students who help determine the course of The Honors College, as well as host social, service and leadership activities for Honors College students

Honors College internships and independent studies – honors-specific educational programs, often taught in conjunction with academic departments that introduce honors students to opportunities in their fields of interest and within the Richmond community.

The Berglund Seminar Series – weekly discussions on topics pertinent to the wide-ranging interests of honors students. Discussions are led by outstanding guest speakers from the university faculty and administration, and a variety of community leaders.

The Honors College is committed to enriching the students' academic and personal endeavors. Additional resources and opportunities include

- An honors undergraduate research program
- Access to the National Scholarship Office
- Honors advising
- Priority registration
- Special library privileges
- First-year and upper-class honors housing options
- Access to first-year and alumni mentorship opportunities
- Global learning experiences
- Honors scholarships

Admission to the Honors College

Eligibility requirements for incoming freshman students

The Honors College is open to qualified entering freshmen, continuing students who demonstrate excellence after enrolling at VCU and transfer students who have shown similar ability at other institutions.

High school graduates with combined new SAT scores of at least 1910 (from one test administration) and a 3.5 or higher unweighted high school GPA (on a four-point scale) **or** are the recipients of a VCU Presidential Scholarship are eligible for admission to The Honors College upon application.

Transfer student admission

Transfer students with a minimum 3.5 cumulative GPA in 12 to 74 semester credit hours of study from their transfer institution must complete an Honors College application and present a personal education essay. The essay describes the student's perspective on his/her personal education. Specific directions for the paper are found in the admissions information for prospective students on The Honors College's website (<http://www.honors.vcu.edu>).

Transfer students who have accumulated more than 74 credits of college course work may petition the dean of The Honors College to gain

admission. Petitioning students must be prepared to offer an explanation for the delay of their application to The Honors College and present a plan for completing the requirements for graduation with University Honors. Appeals will be reviewed on a case-by-case basis.

Admission for current VCU students

Continuing students with a minimum 3.5 cumulative GPA in 12 to 53 semester credits at VCU must complete an Honors College application and present a personal education essay. The essay describes the student's perspective on his/her personal education. Specific directions for the paper are on the The Honors College website (<http://www.honors.vcu.edu>).

Continuing students who have accumulated more than 53 credits of college course work may petition the dean of The Honors College to gain admission. Petitioning students must be prepared to offer an explanation for the delay of their application to The Honors College and present a plan for completing the requirements for graduation with University Honors. Appeals will be reviewed on a case-by-case basis.

Responsibilities

Admission to The Honors College is a privilege that comes with certain responsibilities. In addition to maintaining a minimum 3.5 cumulative GPA, honors students are expected to be active members of The Honors College community. To remain active, students must enroll in at least one honors course per academic year and attend at least three honors seminars or other honors events per semester.

To continue in The Honors College, a student must maintain a minimum cumulative GPA of 3.5. Should a student's cumulative GPA fall below 3.5, but not below a 3.0, the student may be placed on Honors Probation for one semester.

Honors course approval process

All courses designated as honors must be approved by The Honors College. For more information, call (804) 828-1803 or visit the website (<http://www.honors.vcu.edu/academics/>).

Guaranteed Admission Program

The Honors College Guaranteed Admission Program provides an opportunity for honors students to gain admission into select university professional health sciences or graduate programs. (Visit The Honors College website (<http://www.honors.vcu.edu/>) for specific program information.) Honors students who are admitted into the Guaranteed Admissions Program and successfully complete all requirements of the program may enter their designated graduate or professional program without competing via general admission at a later date.

Guaranteed Admission Program application procedures

To be accepted into a Guaranteed Admission Program, a student must be accepted by the university, by The Honors College and by the admissions committee of the program the student wishes to enter. A separate application for the Guaranteed Admission Program is required. The admissions committee may require an interview. The application (postmark) deadline for entering first-year students for the Guaranteed Admission Program (all health sciences) is Nov. 15 of the year prior to the year the student is planning to enroll at VCU.

For additional information about The Honors College Guaranteed Admission Program, see The Honors College website (<http://www.honors.vcu.edu/>) or write or call Associate Dean Carrie Connolly, Ed.D., The Honors College, Virginia Commonwealth University, Box 843010, Richmond, VA 23284-3010, (804) 828-1803, cconnolly@vcu.edu.

OFFICE OF CONTINUING AND PROFESSIONAL EDUCATION

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Mandara Savage, Ph.D.

Executive director

The Office of Continuing and Professional Education (<http://ocpe.vcu.edu/>) offers a wide range of services to VCU and the community at large and is a comprehensive hub for delivering and supporting quality learning experiences to individuals and organizations through continuing education and professional development.

Mission

OCPE, in partnership with the colleges and schools at VCU, provides and supports quality continuing and professional education and skills training for individual, local, regional and national impact. OCPE aligns its priorities to the appropriate themes of the strategic plan, Quest 2025: Together We Transform.

Goals

OCPE provides:

- Comprehensive logistical support for continuing education and professional development activities for the colleges and schools at VCU and VCU Health
- Educational opportunities that further personal, professional and organizational growth
- Customized solutions to partners in the marketplace
- Lifelong learning opportunities for VCU alumni

Whether individuals want to enhance their career or find a new one, fulfill CEU requirements, develop customized training solutions for a company, arrange logistical support for an event, or find opportunities for personal enrichment, OCPE offers courses and services to achieve these goals.

For more information, visit the Office of Continuing and Professional Education website (<http://ocpe.vcu.edu/>) or explore the course directory (<http://ocpe.vcu.edu/courses/>).

OFFICE OF INSTITUTIONAL EQUITY, EFFECTIVENESS AND SUCCESS

912 West Grace Street
Box 843022
Richmond, Virginia 23284-3022
(804) 828-8947
inclusive.vcu.edu (<https://inclusive.vcu.edu>)

The Office of Institutional Equity, Effectiveness and Success embeds diversity, equity and inclusion as a core component of VCU's academic and practical foundations. IES provides policy and civil rights compliance tools to support equity across the university, facilitates inclusive training and education, mobilizes university-community partnerships for real-world experiences and disseminates impactful practices for our communities.

Programs

Service-learning

Service-learning integrates community service with traditional academic courses in order to enhance academic learning, facilitate the development of students into responsible citizens and meet community-identified needs. Each student in a service-learning class participates in organized service activities that directly relate to the subject matter of the course and meet community-identified needs. The service needs are defined by community organizations in partnership with service-learning faculty. All service-learning students participate in reflection activities, which increase their understanding and application of course content, enhance their sense of civic responsibility, and encourage them to learn and grow from their experience. A listing of service-learning courses is provided in the Schedule of Classes each semester. For more information, email servelearn@vcu.edu or visit the Service-Learning website (<https://servicelearning.vcu.edu/>).

VCU America Reads

The America Reads initiative began as a challenge put forth by former President Bill Clinton to "ensure that every child can read independently by third grade." Citizens from across the nation and all walks of life have answered the call to improve the literacy skills of struggling readers. VCU has responded to the challenge by setting aside college work-study funds for eligible students who want to make a difference in the life of a child.

The VCU America Reads program places college work-study students in local elementary schools to provide comprehensive reading support to students who are below grade level in reading.

Interested students can apply through the VCU work-study jobs portal on the Financial Aid website (<https://finaid.vcu.edu/types/workstudy/>).

UNDERGRADUATE COURSES

College of Engineering

Biomedical Engineering (EGRB)

EGRB 101. Biomedical Engineering Practicum. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to students in the biomedical engineering department and requires permission of course coordinator. This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering freshmen. Students will tour medical facilities, clinics and hospitals and will participate in medical seminars, workshops and medical rounds. Students will rotate among various programs and facilities including orthopaedics, cardiology, neurology, surgery, otolaryngology, emergency medicine, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics and internal medicine.

EGRB 102. Introduction to Biomedical Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or a satisfactory score on the math placement exam. Biomedical engineering is a multidisciplinary STEM field that combines biology and engineering, applying engineering principles and materials to medicine and health care. This course provides students with an introduction to biomedical engineering, beginning with a framework of core engineering principles, expanding to specializations within the field of biomedical engineering and connecting the concepts to real-world examples in medicine and health care.

EGRB 104. Introduction to Biomedical Engineering Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Enrollment is restricted to biomedical engineering majors. This laboratory course introduces students to practical laboratory skills required for biomedical engineering. Following successful completion of this course, students will be able to construct and design simple mechanical-electric prototypes; solder electrical components to a breadboard; construct a bridge measurement circuit in order to measure a physiological signal; use a digital multimeter to analyze a circuit. This course is also a writing-intensive course and will provide students with the skills necessary to analyze and write up the results of their experiments. Non-technical skills that will be introduced in this course include how to set up and maintain a laboratory notebook; record and analyze data in Excel, including how to use Excel formulas, create pivot tables and generate graphs; how to plan and execute an experiment; how to read and write a laboratory report in IMRD format; how to write a design concept paper; oral presentation.

EGRB 105. Successes and Failures in Biomedical Technologies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will look at successes and failures in biomedical engineering and technologies through case studies, as well as consider the ethical implementations and framework for developing evidence-based reasoning. Origins and recent advances in biomedical engineering and technologies will be explored, including applications of biomechanics, bio- and nanotechnologies, medical imaging, rehabilitation engineering and biomaterials.

EGRB 111. Introduction to Biological Systems in Engineering. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 151 or a satisfactory score on the math placement exam; and CHEM 100 with a minimum grade of B or a satisfactory score on the chemistry placement exam. The cell is the principle unit of the human body. In this course, students will explore how the cell works from an engineering perspective. Students will learn the essential functions of cells, the components of cells and terminology related to cell biology. The course will also introduce key concepts in engineering, and students will learn how to apply these concepts to mammalian cells.

EGRB 203. Statics and Mechanics of Materials. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201 and PHYS 207, both with a minimum grade of C. Enrollment is restricted to biomedical engineering majors. The theory and application of engineering mechanics applied to the design and analysis of rigid and deformable structures. The study of forces and their effects, including equilibrium of two- and three-dimensional bodies, stress, strain and constitutive relations, bending, torsion, shearing, deflection, and failure of materials.

EGRB 209. Applied Physiology for Biomedical Engineers. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: MATH 200 and MATH 201, each with a minimum grade of C. Enrollment is restricted to biomedical engineering students. This course introduces the concepts of mathematical models and describes physiological systems using applied mathematics and engineering principles. Physiological systems will include a comprehensive study of muscle, nervous, cardiovascular, respiratory, endocrine and musculoskeletal, beginning with applied biophysical concepts in cell anatomy and physiology leading into the various physiological systems. This course also incorporates a laboratory that uses the knowledge-based tools gained through lecture and implements them in practice using exercises in biochemical and physiological calculations, osmosis, electrical network simulation of diffusion, EEG, blood pressure, ECG, spirometry and musculoskeletal anatomy.

EGRB 215. Computational Methods in Biomedical Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. Corequisite: MATH 301, MATH 310 or permission of instructor. Enrollment is restricted to students with sophomore standing in biomedical engineering. The goal of this course is to enhance students' software skills for subsequent biomedical engineering courses and laboratories, as well their careers. The course covers the basic fundamentals of programming in MATLAB, as well as data analysis of biomedical data. An important component of this course is developing problem-solving skills.

EGRB 301. Biomedical Engineering Design Practicum. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 101, EGRB 102, EGRB 203, EGRB 209, EGRB 215, EGRE 206 (or equivalent), each with a minimum grade of C. Restricted to students with junior standing in the biomedical engineering program. Explores the professional and ethical responsibilities of a biomedical engineer. Emphasis will be placed on design issues associated with biomedical engineering, teamwork, regulatory issues and human and animal subjects.

EGRB 303. Biotransport Processes. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 209, MATH 301 and MATH 310, each with a minimum grade of C. Course involves the study of fundamental principles of fluid mechanics and mass transport as well as application of these principles to physiological systems. Fluid mechanics principles covered will include conservation of mass and momentum, laminar and turbulent flow, Navier-Stokes equations, dimensional analysis, Bernoulli's equation, and boundary layer theory. Mass transport principles will include diffusion, convection, transport in porous media and transmembrane transport. Concepts will be applied to studying diffusion in biological tissues, electrolyte transport, vascular transport, blood flow mechanics and cardiovascular flow. The course will also cover organ-specific transport processes, including oxygen transport in the lungs and blood and mass transport in the kidney.

EGRB 307. Biomedical Instrumentation. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRB 102, EGRB 209, EGRB 215 and EGRE 206, each with a minimum grade of C. A study of the physical principles, design and clinical uses of biomedical instrumentation. Analysis and design of low frequency electronic circuits, which are most frequently used in biomedical instruments, will be conducted. Analysis of biosensors, biopotential electrodes, the measurements of biopotential signals including electrocardiogram, electroencephalogram and electromyogram, blood pressure, blood flow, and respiratory system will be conducted. Laboratory work on basic biomedical electronics and instrumentation will be performed.

EGRB 308. Biomedical Signal Processing. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRB 102, EGRB 209, EGRB 215 and EGRB 307; EGRE 206; MATH 301 and MATH 310, all with a minimum grade of C. Explores the basic theory and application of digital signal processing techniques related to the acquisition and processing of biomedical and physiological signals including signal modeling, AD/DA, Fourier transform, Z transform, digital filter design, continuous and discrete systems.

EGRB 310. Biomechanics. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRB 203, EGRB 209 and EGRB 215; MATH 200 and MATH 201, all with a minimum grade of C. Corequisites: MATH 301 and MATH 310. A study of the forces, stresses and strains in the human body during normal function. Emphasis is placed on the mechanics of various components of the body including hard (bone) and soft (skin, vessels, cartilage, ligaments, tendons) tissues from a structure-function perspective. Stress and strain relationships for these biomaterials will be analyzed based upon the fundamentals of engineering mechanics. In addition, the distinctive features of biological materials will be studied with respect to their differences from nonliving materials and elaborated upon in laboratory exercises using material evaluation protocols.

EGRB 315. Device Design Methods. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: EGRB 203, EGRB 215, EGRB 307, MATH 301 and MATH 310, all with a minimum grade of C. The main goal of the course is to introduce a variety of design and prototyping methods for biomedical devices. The focus will be on: (1) using first approximations and Solidworks for mechanical design and (2) using Arduino microcontrollers for controlling sensors and actuators.

EGRB 401. Biomedical Engineering Senior Design Studio. 3 Hours.

Semester course; 9 laboratory hours. 3 credits. Prerequisites: EGRB 101, EGRB 102, EGRB 209, EGRB 215, EGRB 301, EGRB 303, EGRB 307, EGRB 308, EGRB 310, EGRB 315 and EGRB 427, all with a minimum grade of C. Enrollment is restricted to students with senior standing in the Department of Biomedical Engineering or by permission of instructor. A minimum of nine laboratory hours per week is dedicated to the design, development and execution of the senior design (capstone) project for biomedical engineering under the direction of a faculty research adviser in biomedical engineering or an acceptable substitute as determined by the course coordinator. Tasks include team meetings (for team projects), brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects. Monthly progress reports are due to the research adviser and course coordinator. At the end of the first semester, each team will orally present to the BME faculty project background information and discuss potential technical approaches and deliverables.

EGRB 402. Biomedical Engineering Senior Design Studio. 3 Hours.

Semester course; 9 laboratory hours. 3 credits. Prerequisites: Completion of EGRB 401 with a minimum grade of C. A minimum of nine laboratory hours per week is dedicated to the design, development and execution of the senior design (capstone) project for biomedical engineering under the direction of a faculty research adviser in biomedical engineering or an acceptable substitute as determined by the course coordinator. Tasks include team meetings (for team projects), brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects. Monthly progress reports are due to the research adviser and course coordinator. Final project reports must be submitted before the end of the semester. All design teams must participate in the College of Engineering public poster session. At the end of the semester and conclusion of the two-semester design process, teams must present their final designs and deliverables before the BME faculty.

EGRB 403. Tissue Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 209 with a minimum grade of C or permission of instructor. Enrollment is restricted to students with junior standing in engineering. Study of the design, development and clinical application of tissue engineered components for use in the human body. Analysis of biology, chemistry, material science, engineering, immunology and transplantation as pertains to various tissue engineered components including blood vessels, bone, cartilage, pancreas, liver and skin.

EGRB 405. Finite Element Analysis in Solid Mechanics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 310 and MATH 301, each with a minimum grade of C. Finite element analysis as presented in this course is a numerical procedure for solving continuum mechanics problems that cannot be described by closed-form mathematical solutions. Emphasis will be placed on understanding the theoretical basis for the method, using a commercial software program, and understanding the volume of information that can be generated. Applications to both one- and two-dimensional problems in solid mechanics and biomechanics will be explored.

EGRB 406. Artificial Organs. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 209, EGRB 303, EGRB 307 and EGRB 310, each with a minimum grade of C, or permission of instructor. This course explores the design, operating principles and practices regarding artificial organs and their use in the human body. Analysis of dialysis systems for kidney replacement, artificial hearts and heart assist devices, cardiac pacemakers, sensory organ assist and replacement devices, and artificial liver and pancreas devices. Design aspects, legal ramifications, regulatory issues and clinical implantation issues will be addressed.

EGRB 407. Physical Principles of Medical Imaging. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 208 with a minimum grade of C. Enrollment is restricted to students with junior standing in the College of Engineering. A study of the physical principles and basic clinical uses of medical imaging. Analysis of radiation and interaction of radiation, generation and control of X-rays, X-ray diagnostic methods, X-ray computed tomography (CT), magnetic resonance imaging (MRI) and ultrasonic imaging will be conducted. Basic principle of radionuclide imaging also will be introduced.

EGRB 408. Advanced Biomedical Signal Processing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 308. This course will briefly review the basic theory of discrete-time signal processing techniques in biomedical data processing. Advanced signal processing techniques including adaptive signal processing, wavelets, spectral estimation and multirate signal processing will be employed. Specific examples utilizing electrocardiogram (ECG) and other biological signals are provided. Topics covered are alternance phenomenon in biological systems, late potential in ECG, intrapotential in ECG and coherence analysis.

EGRB 409. Microcomputer Applications in Biomedical Engineering. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGRB 307. Covers microcomputer applications (hardware and software) as applied to biomedical science and biomedical engineering. Basic hardware components of a microcomputer are discussed with particular reference to configurations needed for analyzing biomedical events. Software applications including data encoding, data storage, graphical interfaces and real-time processing are explored for analysis of physiological and biomedical signals. Students will develop algorithms using LabView and MatLab to solve problems in biomedical engineering in the laboratories.

EGRB 410. Cellular Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 209 with a minimum grade of C. This course will be a detailed study of the structure and function of the cell from an engineering perspective. Fundamental molecular biology, cell biology and biochemistry topics (cellular structure, signal transduction, cell adhesions, cytoskeleton) will be introduced. Engineering principles (kinetics, transport, mechanics, thermodynamics, electrochemical gradient) will be applied to these topics. Emphasis is placed on methods to disrupt, enhance or mimic in vivo cellular function in biomedical applications.

EGRB 411. Cell Mechanics and Mechanobiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 310 and EGRB 410 with minimum grades of C or permission of instructor. Focusing on cellular-extracellular matrix interactions, students will gain a quantitative understanding of the way cells detect, modify and respond to the physical properties within the cell environment. Coverage includes the mechanics of single-molecule polymers, polymer networks, two-dimensional membranes, whole-cell mechanics and mechanobiology. Mechanobiology topics include cancer and development, pulmonary system, cardiovascular system, and the nervous system. Students will gain understanding of techniques in cellular manipulation and quantification of cellular forces.

EGRB 412. Regenerative Engineering and Medicine. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 209 or equivalent with minimum grade of C. Students will apply fundamental concepts of cell and molecular biology, biochemistry, medicine and pathology, as well as material science and engineering principles to design novel strategies for cell and drug delivery, tissue engineering and regenerative medicine. Emphasis will be placed on designs and methods to solve current complex biomedical problems.

EGRB 413. Computational and Experimental Models of Cellular Signal Transduction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 215 and EGRB 410 with minimum grades of C. Students will study the process by which an extracellular protein binding event is transduced and interpreted as an incoming signal into a cell. Students will learn the biology of cellular signal transduction and will also learn how to apply computational models and experimental techniques to predict and investigate these pathways. Students will follow the course of a protein within a signal transduction cascade, from binding to a receptor, activating intracellular pathways, inducing new transcription and translation and targeting of the protein to its final location. Students will develop MATLAB-based mathematical models to predict signal transduction dynamics, and then will study experimental techniques that are used to both disrupt and measure signal transduction.

EGRB 420. Assistive Technology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 206, EGRB 209, EGRB 215, EGRB 307, EGRB 308 and EGRB 310, all with a minimum grade of C. Enrollment is restricted to biomedical engineering students or with permission of instructor. This course explores the principles and practice regarding the development of assistive technology for individuals with disabilities. The course will address the human user considerations that need to be taken into account in developing technology for individuals with different disabilities or multiple disabilities. It will also provide a general overview of current technology and software algorithms used. The four main areas of assistive technology that will be considered are for the deaf and hard of hearing, individuals who are blind and visually impaired, individuals with cognitive impairments, and individuals with motor impairments.

EGRB 421. Human Factors Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 209 and EGRB 310, both with a minimum grade of C. This course explores the principles and practices regarding ergonomics and human factors engineering and the interaction of biomedical engineering with human function. Analysis of the functions of the human body regarding motion, sensory mechanisms, cognition and interaction with the environment will be included. Interactions of the human body with technology, workplaces, equipment and computers will be examined. Design of workplaces for optimal human performance will be discussed. Analysis of the design and arrangement of controls and displays will be covered.

EGRB 422. Human Performance Measurement Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 209, EGRB 307, EGRB 308 and EGRB 421, each with a minimum grade of C. Enrollment is restricted to biomedical engineering majors or with permission of instructor. Course explores the principles and practices of human performance measurement including direct and indirect measurement techniques and analysis. Course addresses the subjective, psychophysical and physiological methods related to the measurement, analysis and quantification of human performance.

EGRB 423. Rehabilitation Engineering and Prostheses. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 203 and EGRB 209, both with a minimum grade of C. Enrollment is restricted to biomedical engineering majors or with permission of instructor. This course explores the principles and practices regarding the development of rehabilitation therapy devices and prostheses. The course will further address the human user and factors that must be considered when developing devices and engineering solutions for individuals with different therapy and prosthetic needs. The course will also provide a general overview of current technologies and the engineering principles behind these designs.

EGRB 427. Biomaterials. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 209 with a minimum grade of C. Enrollment is restricted to students with junior standing in biomedical engineering or with permission of the instructor. Principles of materials science as it relates to the use of materials in the body. Characterization of biomaterials. Study of the properties of biomedical materials used as implants, prostheses, orthosis and as medical devices in contact with the human body. Analysis of physical, chemical, thermal and physiological response factors associated with materials and implant devices used in the human body.

EGRB 491. Special Topics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated with different topics. Advanced study of a selected topic in biomedical engineering. See the Schedule of Classes for specific topics to be offered each semester and prerequisites, corequisites or restrictions.

Chemical and Life Science Engineering (CLSE)**CLSE 101. Introduction to Engineering. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: course open to first-year students majoring in chemical and life science engineering. Introduction to chemical and life science engineering. Topics covered include ethics and social responsibility; engineering design process; engineering solutions; estimations and approximations; dimensions, units and conversions; mathematics and computer solutions; life-long learning; introduction to the interface between engineering, biology and medicine.

CLSE 102. Methods in CLSE. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: CLSE 101. An introduction to problem formulation and solution methods for chemical and life science engineering. Typical chemical and life science engineering scenarios will be presented. Emphasis will be placed on identifying and formulating problems based on presented scenarios.

CLSE 115. Introduction to Programming for Chemical and Life Science Engineering. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 200. Introduction to the concepts and practice of structured programming. Topics include problem-solving, top-down design of algorithms, objects, basic syntax, control structures, functions and arrays.

CLSE 201. Chemical Engineering Fundamentals I: Material Balances. 4 Hours.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: CLSE 115, CHEM 101 and CHEM 102, and MATH 200 and MATH 201, or equivalents, all with minimum grades of C. The first of two introductory chemical and life science engineering courses. Covers material balances on steady-state chemical processes.

CLSE 202. Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics. 4 Hours.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: CLSE 201 with a minimum grade of C, CHEM 101-102 and MATH 200-201 or equivalents. The second of two introductory chemical and life science engineering courses. Covers energy balances on steady-state chemical processes, computer-aided balance calculations, balances on transient processes and introduction to thermodynamics.

CLSE 301. Transport Phenomena I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 202 with a minimum grade of C; PHYS 208 and MATH 301. Basic concepts of transport phenomena as applied to chemical and life science engineering. Topics include transport of mass momentum and energy in single and multidimensions.

CLSE 302. Transport Phenomena II. 4 Hours.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: CLSE 301 and CLSE 305. Concepts of transport phenomena as applied to chemical and life science engineering. Topics include advanced multicomponent, multiphase systems, integral analysis, and an integrated view of momentum, heat and mass transport in unit operations.

CLSE 305. Thermodynamics of Phase Equilibria and Chemical Reactions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 202 with a minimum grade of C and MATH 307. Thermodynamic properties of fluids and mixtures, partial molar quantities, phase equilibria, activity coefficients and correlations, equations-of-state, chemical reaction equilibria for liquid, vapor and multiphase reactions, and the use of equations-of-state and activity/fugacity correlations to obtain the thermodynamic functions required for the calculation of chemical reaction equilibrium constants. Computing using Excel VBA is a required component of this course.

CLSE 306. Industrial Applications of Inorganic Chemistry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 and CHEZ 302. Chemical engineering students: EGRC 201 and EGRC 205. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, materials and energy balance, availability and logistics of starting materials, economic impact and environmental effects. Crosslisted as: CHEM 306.

CLSE 312. Chemical Reaction Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 301 and 305. Introduces the student to the analysis of reactors via coupling of empirical reaction rates and thermodynamic constraints with reactor material and energy balances. The behavior of the ideal reactor types (batch, CSTR and PFR) is emphasized with attention given to departure from these ideals by real systems.

CLSE 320. Instrumentation Laboratory. 3 Hours.

Semester course; 1 lecture and 6 laboratory hours. 3 credits. Prerequisites: CLSE 301 and CLSE 305. This laboratory introduces students to a variety of measurement instruments used in modern chemical engineering laboratories and process plants. Detailed laboratory reports are required for each of the experiments undertaken by the students.

CLSE 325. Bioengineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 201 and BIOL 151 or BIOL 152. An introductory and survey level course required for all chemical engineering students. This course introduces concepts and principles of chemical engineering to problems and issues in the life sciences, biotechnology and medicine. Students apply heat and mass transfer concepts, separations and controls to topics that include clinical diagnostics, bioanalytical instrumentation, biosensors and biochips, bioprocess engineering including fermentation, biochemical pathway engineering, protein folding and aggregation, bioreactors and tissue engineering.

CLSE 402. Senior Design Studio I (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: senior standing in chemical and life science engineering and participation in a senior design (capstone) project; CLSE 301, 302, 305 and 312. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

CLSE 403. Senior Design Studio II (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: senior standing in chemical and life science engineering and participation in a senior design (capstone) project; CLSE 402. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

CLSE 405. Process Synthesis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 302, 305 and 312. A senior technical elective. Students synthesize flowsheets for existing and newly proposed chemical and biochemical products. Quantitative tools learned in earlier courses are used to examine the technical and economic feasibility of the flowsheets. Written bi-weekly status reports are required from each student and each student completes a process synthesis and analysis as a semester project.

CLSE 409. Process Control in Chemical and Life Science Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 301 and 305. Covers process control as applied to chemical and life science engineering with many practical examples. Topics include time and frequency domain analysis, multivariable processes and applications to chemical and biochemical production and processing.

CLSE 428. Introduction to Polymer Science and Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 302, 305 and 312, and CHEM 302, or equivalents. A senior technical elective. The course offers an introduction to the chemistry, physical properties and processing of polymers. Topics include step and chain polymerization, structure/property relationships, mechanical properties of plastics and elastomers, solution properties, methods for polymer characterization, and processing techniques.

CLSE 440. Unit Operations Laboratory. 3 Hours.

Semester course; 1 lecture and 6 laboratory hours. 3 credits. Prerequisites: CLSE 302, CLSE 305 and CLSE 312. Students carry out experiments with chemical and biochemical reactors, energy exchangers, fluid flow networks and other unit operations. Detailed laboratory reports are required for each of the experiments undertaken.

CLSE 450. Undergraduate Research in Chemical and Life Science Engineering. 1-6 Hours.

Semester course; variable hours. Up to 6 credits. Undergraduate research under the supervision of a faculty member. Specific topics vary depending on the interests of the student and the adviser. Registration requires approval of the student's academic adviser and research adviser.

CLSE 460. Undergraduate Honors Research in Life Sciences Engineering. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Corequisites: BIOL 218, CLSE 302. An undergraduate honors research course for academically talented juniors and seniors requiring advanced work and an honors thesis on a topic relevant to life sciences engineering. Topics and credit hours will be chosen in consultation with a sponsoring faculty member.

CLSE 461. Stem Cell Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 218, CLSE 302. The production and behavior of adult and embryonic stem cells are studied and potential applications for the treatment of disease are surveyed. Stem cell engineering techniques including parthenogenesis, nuclear transfer stem cells and embryonic carcinoma cells are introduced. The use of stem and germ cells for cloning is covered, and ethical considerations involving the use of embryonic human stem cells are discussed.

Computer Science (CMSC)**CMSC 101. Introduction to Computer Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or the equivalent with a minimum grade of C. An introduction to the work of computer scientists, including an overview of current research and application areas as well as career opportunities. Topics include problem-solving, the basics of computer organization, the software engineering life cycle, research resources and social and ethical aspects of technology. Additional topics also include binary, hexadecimal, two's complement, floating point representation, ASCII and Unicode.

CMSC 191. Topics in Computer Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

CMSC 210. Computers and Programming. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Introduction to object-oriented programming using Python. The course introduces students to structured programming logic and design techniques. The course content also includes instruction in critical thinking and problem-solving skills using contemporary tools. Specific topics include flowcharting, pseudocode and program control structures, including sequence, selection and repetition. This course is not applicable for credit toward the B.S. in Computer Science.

CMSC 245. Introduction to Programming Using C++. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or satisfactory score on the Mathematical Placement Test. Students registering for CMSC 245 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using C++. Problem-solving, top-down design of algorithms, objects, basic C++ syntax, control structures, functions and arrays. This course is intended for engineering majors.

CMSC 246. Advanced Programming Using C++. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 245. Advanced programming in C++. Topics include program design, objects, classes, inheritance, files, strings, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques. This course is intended for engineering majors.

CMSC 255. Introduction to Programming. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: calculus-level placement on the VCU Mathematics Placement Test within the one-year period immediately preceding enrollment in the course, or MATH 151 or equivalent. Students are expected to have fundamental computer skills. Introduction to object-oriented programming using Java. Topics include problem-solving, top-down design of algorithms using control structures, methods, arrays, basic I/O, basic concepts of objects and classes in Java, Java classes for manipulating strings, and introduction to program testing, UML notation and integrated development environments. Students may not receive credit for both CMSC 255 and INFO 250.

CMSC 256. Data Structures and Object Oriented Programming. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: CMSC 255 with a minimum grade of C; corequisite: CMSC 302. Advanced programming using Java. Topics include introduction to object-oriented design, inheritance, polymorphism, exceptions, interfaces, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques. Continued focus on program testing and UML notation. Students may not receive credit for both CMSC 256 and INFO 350.

CMSC 257. Computer Systems. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: CMSC 256 with a minimum grade of C. Topics include UNIX essentials; system programming in C; machine-level representation and organization of programs/data, arrays and pointers; types, structs and unions; strings; bit/byte operations; memory management; shell programming; input/output, including file handling; debugging; signals; network programming using sockets; program concurrency using forks and threads; experiments on program performance and optimization techniques.

CMSC 302. Introduction to Discrete Structures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 255 with minimum grade of C. Logic and proofs, sets, functions, sequences and sums, relations, graphs, trees, induction and recursion, advanced counting technique (recurrences).

CMSC 303. Introduction to the Theory of Computation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 302 or the equivalent with a grade of C or better. Complexity classes, grammars, automata, formal languages, Turing machines, computability.

CMSC 311. Computer Organization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 302 with minimum grade of C; corequisite: CMSC 257. Introduction to the basic organization of computers including elementary digital logic design, processor and arithmetic/logic unit design, data paths, memory hierarchy, I/O devices, instruction set architecture and addressing modes.

CMSC 312. Introduction to Operating Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 311 or EGRE 364. Computer systems design, I/O processing, secondary memory organization, command languages, memory management and job scheduling. Students will work in teams to design and implement an operating system simulation.

CMSC 320. Software Engineering and Web Development. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisite: CMSC 210. Introduction to software engineering and web development. The course introduces students to the software development process, including design, development and testing principles. Students will apply these principles in the development of a web application. This course is not applicable for credit toward any College of Engineering degrees.

CMSC 330. Data Science Skills. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisite: CMSC 210. Introduction to data science skills. The course introduces students to the foundations of data science and the tools used to collect, analyze and represent data. Students will apply these principles in both analysis and visualization projects. This course is not applicable for credit toward any College of Engineering degrees.

CMSC 340. Cybersecurity Skills. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisite: CMSC 210. Introduction to cybersecurity skills. The course introduces students to cybersecurity terminology, standards and best practices. Students will apply these practices as part of a cybersecurity-focused project. This course is not applicable for credit toward any College of Engineering degrees.

CMSC 355. Fundamentals of Software Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 256 or EGRE 246, either with a minimum grade of C. Provides an overview of how to engineer software systems, including all stages of the software development process based on agile principles. Familiarizes students with modern software tooling and the principles of software quality and testing. Students will work in teams to gain experience in software development methodology, write specification and design documents, and develop a prototype.

CMSC 391. Topics in Computer Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

CMSC 401. Algorithm Analysis with Advanced Data Structures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 with a grade of C or better and CMSC 302 with a grade of C or better. Introduction to algorithm analysis and complexity classes. Advanced data structures topics including multiple linked lists, height-balanced trees, B-trees, hashing and graph representation; incorporating data structures into object-oriented design. Analysis of various searching and sorting algorithms. Algorithm design topics include divide-and-conquer, dynamic programming and greedy methods.

CMSC 403. Programming Languages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 and CMSC 303, both with a minimum grade of C. Survey of representative modern programming languages. Formal definition of programming languages including specifications of syntax and semantics. Precedence, infix, prefix and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines and tasks. List processing, string manipulation, data description and simulation languages. Run-time representation of program and data structures.

CMSC 404. Compiler Construction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and 403. A first course in compiler theory and construction. Formal description of languages, underlying theory and design techniques for compilers, lexical analysis, syntax analysis, syntax-directed translation, intermediate languages, run-time system management, code generation, code optimization, compiler-building tools.

CMSC 409. Artificial Intelligence. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 with a minimum grade of C and MATH 310. Covers problem spaces, problem-solving methods, game playing, knowledge representatives, expert systems, natural language understanding.

CMSC 410. Introduction to Quantum Computing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and MATH 310, both with a minimum grade of B. Introduction to quantum information processing: state vectors and density operators, tensor product space, unitary evolution, no-go theorems, measurement, qubit, gate model of quantum computing, quantum complexity theory, quantum error correction, quantum algorithms, and quantum machine learning.

CMSC 411. Computer Graphics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 355 and MATH 310. Presents mathematical techniques for graphic development and transformation, curve and surface approximation and projections, graphical languages and data structures and their implementation, graphic modeling.

CMSC 412. Social Network Analysis and Cybersecurity Risks. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 with a minimum grade of C. Covers network models, link prediction and analysis, centrality measures, random networks, power-laws and preferential attachment, small world phenomenon and decentralized search, community structure, information propagation in networks, and security and privacy issues in OSNs.

CMSC 413. Introduction to Cybersecurity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. This course provides introduction and basic concepts of computer security, cyber attacks, cyber defense, cyber forensics and cyber ethics.

CMSC 414. Computer and Network Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. Corequisite: CMSC 312. This course covers the best practices of computer systems and network security. Key topics include security architecture, cryptographic systems and security management tools.

CMSC 415. Introduction to Cryptography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. This course provides a rigorous and theoretical introduction to modern cryptography. Key topics include symmetric key encryption and authentication, public key encryption, and digital signatures.

CMSC 416. Introduction to Natural Language Processing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. Covers rule-based and statistical methods for creating computer programs that analyze, generate and understand human language. Topics include regular expressions and automata, context-free grammars, probabilistic classifiers, and machine learning. Word-level, syntactic and semantic processing are all considered. Application to real-world problems such as spell-checking, Web search, automatic question answering, authorship identification and developing conversational interfaces.

CMSC 420. Software Project Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355 with a minimum grade of C. Study of the logistics of team software development. Students work in teams to gain experience in software management and develop the components of a larger software product. Topics include risk management, project planning, quality management, configuration management and software testing.

CMSC 425. Introduction to Software Analysis and Testing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355 with a minimum grade of C. Enrollment is restricted to majors in the computer science program. A practical introduction to testing complex software applications. An introduction to concepts and techniques used in the analysis of software, including basic and advanced control flow and data flow analyses. Using analytic results to derive test data and validate the correct implementation of programs. Advanced testing strategies including random, structural, mutation and fuzzing.

CMSC 428. Mobile Programming: iOS. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355, with a minimum grade of C. This course covers the fundamentals of Swift, Xcode and iOS for programming and design of iOS applications. Background in object-oriented programming and access to a computer with Xcode platform is required.

CMSC 435. Introduction to Data Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. This course covers understanding, representation, storage, retrieval, preprocessing and analysis of data. Specific topics include data quality and preprocessing, database management systems, data warehouses, selected methods for scalable unsupervised and supervised data analysis, and assessment of results generated by these methods. Students will be engaged in analysis of real-life data from data preprocessing, through data analysis, to the assessment of a knowledge product.

CMSC 440. Data Communication and Networking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 257 with a minimum grade of C. Enrollment is restricted to majors in the College of Engineering. This course explores computer networking, focusing on the applications and protocols that run on the Internet. Students will take a top-down approach to the layered network architecture, studying applications first and then proceeding down the network "stack" toward the physical link. Students will examine the operation of applications such as the web, FTP, e-mail and DNS. At the transport layer, students will study both connectionless UDP and connection-oriented TCP, with an in-depth study of TCP operation, specifically flow control and congestion control. Data communications are explored through various data routing protocols. Additional topics include network security and wireless/mobile networking.

CMSC 451. Senior Project I. 3 Hours.

Semester course; 3 laboratory hours. 3 credits. Prerequisites: CMSC 355 with minimum grade of C; and UNIV 200 or HONR 200 or equivalent. Enrollment is restricted to computer science majors with senior standing who have 24 credits in computer science courses. Capstone project or experience for the computer science major; research and presentation methods in computer science. Each student will participate, either individually or as part of a team, in a project or other experience approved by the course coordinator or sponsored by another computer science faculty member. Each student will write and revise a research paper on a technical topic associated with his or her project or experience. Students will submit a detailed written description of their proposed project or experience and will present orally some aspect of what they have learned and/or done during the semester. (This course cannot be counted as upper-level CMSC electives for students graduating under bulletins prior to 2008-09.)

CMSC 452. Senior Project II. 3 Hours.

Semester course; 1 lecture and 2 laboratory hours. 3 credits. Prerequisites: CMSC 451 and CMSC 508, both with a minimum grade of C. Enrollment is restricted to students with senior standing in the computer science department. Capstone project or experience for the computer science major; research and presentation methods in computer science; ethical, legal and social issues in computing; and professional responsibilities of computer scientists. Each student will participate, either individually or as part of a team, in a project or other experience approved by the course coordinator or sponsored by another computer science faculty member. Each student will write and revise a research paper on a technical topic associated with his or her project or experience. Students must continue on the same project that was started in CMSC 451. A final project report and presentation, which will include a discussion of associated legal, social and/or ethical issues, are due at the conclusion of the two-semester project or experience. (This course cannot be counted as upper-level CMSC electives for students graduating under bulletins prior to 2008-09.)

CMSC 455. Software as a Service. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355 with a minimum grade of C. Enrollment is restricted to majors in the computer science program. Students will examine the challenges, opportunities and open problems of software-as-a-service deployed on commodity cloud computing platforms. Covers relevant software architectures and API design principles. Includes concepts of modern software frameworks for software development, cloud computing for software deployment and software operations. Students participate in projects that use modern tooling to develop, deploy and monitor a software application.

CMSC 475. Design and Implementation of User Interfaces. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355 with a minimum grade of C. Enrollment is restricted to majors in the computer science program. This course investigates the design and implementation of user interfaces and the evaluation of user experiences. Particular emphasis is placed on creating professional-quality designs and implementations and on evaluating these implementations with end-users. Students will create their own UIs as well as critique others to develop a deep understanding of what works in practice.

CMSC 491. Topics in Computer Science. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for credit with different content. Prerequisite: permission of instructor. This course will cover selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester.

CMSC 492. Independent Study. 2-4 Hours.

Semester course; variable hours. 2, 3 or 4 credits per semester. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

Electrical and Computer Engineering (EGRE)**EGRE 101. Introduction to Engineering. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Course open to first-year students majoring in electrical or computer engineering. Introduction to engineering through instruction on basic concepts of engineering. Topics will include an introduction to basic circuit components and circuit analysis, digital logic design and programming. General topics important to all engineers will also be covered, such as mathematics, improving written and oral communication skills, teamwork, ethics and life-long learning. The laboratory introduces fundamental testing, measurement, troubleshooting methodology and proper laboratory notebook maintenance. Engineering design and analysis is also emphasized through a team-based design that involves designing, building and programming a robot.

EGRE 206. Electric Circuits. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 200; and one of EGRE 101 or EGRB 102 or both EGMN 103 and EGMN 190, as applicable per department, all with minimum grades of C. Corequisite: MATH 201. An introduction to electrical circuit theory and its application to practical direct and alternating current circuits. Topics include Kirchhoff's Laws (review from departmental prerequisites, as applicable), fundamental principles of network theorems, transient and steady-state response of RC, RL and RLC circuits by classical methods, time-domain and frequency-domain relationships, phasor analysis and power. Laboratory work, practical applications and integral laboratory demonstrations emphasize and illustrate the fundamentals presented in this course.

EGRE 207. Electric Circuits II. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 206, with a minimum grade of C. An introduction to higher level electric circuit theory, including the study of basic active components, such as diodes and operational amplifiers. Emphasis will be placed on design rather than analysis. The laboratory exercises will serve to train students in the art of designing a circuit to perform specific tasks and to conform to specific design parameters.

EGRE 245. Engineering Programming. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 151 with a minimum grade of C. Enrollment restricted to electrical and computer engineering majors. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using C. Problem-solving, top-down design of algorithms, basic C syntax, control structures, functions, arrays, files and strings.

EGRE 246. Advanced Engineering Programming. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 245 with a minimum grade of C. Enrollment is restricted to electrical and computer engineering majors. Advanced programming for engineering applications in C. Topics include recursion, searching and sorting techniques, data structures, program design and problem solving, and software testing.

EGRE 254. Digital Logic Design. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 101 and EGRE 245 or equivalents, both with a minimum grade of C. An introduction to digital logic design with an emphasis on practical design techniques and circuit implementations. Topics include number representation in digital computers, Boolean algebra, theory of logic functions, mapping techniques and function minimization, design of combinational, clocked sequential and interactive digital circuits such as comparators, counters, pattern detectors, adders and subtractors. An introduction on designing digital circuits using schematic capture, logic simulation and hardware description languages is included. Students will use the above basic skills in the laboratory to design and fabricate digital logic circuits using discrete logic and field programmable gate arrays.

EGRE 303. Electronic Devices. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: EGRE 306 and MATH 301, both with a minimum grade of C. An introduction to solid state electronic devices covering the fundamentals of atomic structure, band theory, free carrier statistics and charge transport in solids as well as terminal electrical characteristics of semiconductor devices. The course covers basic device physics of p-n junctions, metal-semiconductor junctions, metal-oxide semiconductor capacitors and transistors, light-emitting and -detecting devices, and materials and device characterization methods, including four-probe, Hall effect, I-V, C-V, and carrier lifetime, and optical spectroscopy.

EGRE 306. Introduction to Microelectronics. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 207 and MATH 301, both with a minimum grade of C. This course covers the analysis, modeling and design of electrical circuits which contain electronic devices. Students will learn to design analog circuits to specifications through laboratory problems, a design project and circuit simulation.

EGRE 307. Integrated Circuits. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 306 and EGRE 337, both with a minimum grade of C. Corequisite: EGRE 336. Analysis, modeling, design and measurement of advanced MOSFET and bipolar analog integrated circuits. Topics include active filters, differential amplifiers, frequency response and feedback topologies. Operational amplifier circuit topologies are used as a means of studying input, gain, level shift and output stages. Circuit design techniques are explored for mixed signal analog-digital circuits. This course provides the opportunity for a group design project of an integrated circuit chip, using advanced software tools for simulation and physical layout.

EGRE 309. Introduction to Electromagnetic Fields. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: EGRE 207, MATH 301, MATH 307 and PHYS 208, all with a minimum grade of C. This course provides an introduction to the concept of electromagnetic fields. Topics include electrostatics, magnetostatics, scalar and vector potentials, and work and energy in fields, as well as the analysis and understanding of the phenomena associated with static electric and magnetic fields. Laboratory exercises will serve to reinforce students' understanding of fields and train them in methods to measure, quantify and analyze electromagnetic phenomena.

EGRE 310. Electromagnetic Fields and Waves. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGRE 309 with a minimum grade of C. This course covers the fundamentals of time-varying electromagnetic fields. Topics include electromagnetic induction, Maxwell's equations, wave propagation, guided waves, transmission lines and antennas. Laboratory exercises will serve to reinforce students' understanding of time-varying fields and waves and train them in methods to measure, quantify and analyze dynamic electromagnetic phenomena.

EGRE 334. Introduction to Microfabrication. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: CHEM 101, MATH 201 and PHYS 208, all with a minimum grade of C. This course gives an overview of microscale device fabrication and testing for a general audience. A wide variety of new terms, equipment and processes are presented. Fundamentals of photolithography, mask making, diffusion, oxidation, ion implantation, film deposition and etching are covered. Laboratory work consists of safety training, hands-on fabrication experience and testing. A laboratory chip test is fabricated from start to finish and then tested. The test chip includes basic integrated circuit elements as well as solar cells.

EGRE 335. Signals and Systems. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 206, EGRE 245 and MATH 301, all with a minimum grade of C. Presents the concept of linear continuous-time and discrete-time signals and systems, their classification, and analysis and design using mathematical models. Topics to be covered: linear systems and their classification, differential and difference equations, convolution, Fourier series, Fourier transforms, the Laplace and Z transforms and their application, continuous-time to discrete-time conversion.

EGRE 336. Introduction to Communication Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 337 with a minimum grade of C. Introduction to the theory and application of analog and digital communications including signal analysis, baseband transmission, amplitude and angle modulation, digital modulation, baseband digital communication, and design considerations.

EGRE 337. Statistical Information Processing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 335 with a minimum grade of C. This class presents an introduction to probability, random variables, random processes and statistics with applications in electrical and computer engineering.

EGRE 347. Applied Object-oriented Programming. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 246 with a minimum grade of C. Enrollment is restricted to electrical and computer engineering majors. Object-oriented programming for engineering applications in C++ and other advanced object-oriented languages. Topics include classes and methods, inheritance, templates, and object-oriented program development. The use of standard libraries for applications such as image processing and cryptography will be explored.

EGRE 364. Microcomputer Systems. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits.
Prerequisites: EGRE 246 and 254, both with a minimum grade of C. Basic computer organization, microprocessor instruction sets and architectures, assembly language programming and the function of computer memory and I/O subsystems will be discussed. The laboratory is designed to reinforce the lectures by providing the opportunity to study the workings of a simple computer system in detail using simulation models and real hardware. Students will write and execute assembly language programs and make use of commercial design automation tools.

EGRE 365. Digital Systems. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits.
Prerequisites: EGRE 246 and 254, both with a minimum grade of C. Corequisite: EGRE 364. Focuses on the design of modern digital systems. Topics covered include: introduction to modeling, simulation, synthesis and FPGA design techniques using VHDL; microprocessor peripherals and interfacing; embedded system hardware and software design issues.

EGRE 404. Senior Design Studio I (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: for electrical engineering majors: EGRE 207, EGRE 246, EGRE 254 and EGRE 335; and completion of three from: EGRE 306, EGRE 309, EGRE 310, EGRE 337 and EGRE 364, or completion of EGRE 347, EGRE 364 and EGRE 365; for computer engineering majors: EGRE 207, EGRE 335, EGRE 347, EGRE 364 and EGRE 365. Corequisite: any electrical or computer engineering technical elective. All prerequisite courses must be completed with a minimum grade of C. Enrollment is restricted to students with senior standing in electrical engineering or computer engineering and participation in a senior design (capstone) project. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGRE 405. Senior Design Studio II (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisite: EGRE 404 with a minimum grade of C. Enrollment is restricted to students with senior standing in electrical engineering or computer engineering and participation in a senior design (capstone) project. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGRE 406. Senior Design Studio I - VIP (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: for electrical engineering majors: EGRE 207, EGRE 246, EGRE 254, EGRE 335, and three credits of ENGR 497 during the two semesters prior to enrollment; and completion of three from: EGRE 306, EGRE 309, EGRE 310, EGRE 337 and EGRE 364, or completion of EGRE 347, EGRE 364 and EGRE 365; for computer engineering majors: EGRE 207, EGRE 335, EGRE 347, EGRE 364, EGRE 365 and three credits of ENGR 497 during the two semesters prior to enrollment. Corequisite: any electrical or computer engineering technical elective. All prerequisite courses must be completed with a minimum grade of C. Enrollment is restricted to students with senior standing in electrical engineering or computer engineering, and participation in a senior design (capstone) project associated with their vertically integrated project team. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGRE 407. Senior Design Studio II - VIP (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisite: EGRE 406 with a minimum grade of C. Enrollment is restricted to students with senior standing in electrical engineering or computer engineering and participation in a senior design (capstone) project associated with their vertically integrated project team. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGRE 426. Computer Organization and Design. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGRE 364 or CMSC 311 with a minimum grade of C. This course presents the foundation for computer design at the register transfer level. Starting from an instruction set architecture, students will learn the process used to design a data path and control unit to implement that instruction set. In addition, the topics of computer components and structures, data paths and control unit organizations, I/O and memory systems, interrupt systems, pipelining, and multiprocessing will be discussed. In addition to reinforcing the lecture material, the laboratory exercises will teach students the art of modeling and designing computer system components using a hardware description language.

EGRE 428. Introduction to Integrated Systems Design. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: EGRE 364 and EGRE 365, both with a minimum grade of C. This course provides an introduction to senior capstone design for computer engineers. Topics include hardware/software project design methodologies, integrated hardware and software design tools, life cycle costs analysis and requirements and specification analysis. Students are also introduced to concepts and design tools for FPGA and system-on-a-chip devices. Lectures are intended to support tasks required to execute a successful senior capstone experience. These tasks include, but are not limited to, project configuration management, customer interaction skills, requirements elicitation, simulation, procurement, design, testing and validation.

EGRE 429. Advanced Digital Systems Design. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisite: EGRE 428 with a minimum grade of C. This course provides students with theoretical and practical foundations for advanced embedded systems design and cyber physical system applications. It extends the concepts introduced in EGRE 428. Special emphasis is placed on the design of advanced embedded computing platforms for cyber physical system applications. Topics covered include: introduction to cyber physical systems; cyber physical systems theory; FPGA and system-on-a-chip design environments; designing, developing and implementing cyber physical systems using FPGA and system-on-a-chip technology; real-time computing and operating systems; real-time sensor networks; engineering design standards; and verification and validation of complex designs. In the laboratory the students will use state-of-the-art system development tools to design, construct, test and verify a system-on-a-chip-based system to meet appropriate engineering standards and multiple realistic system constraints.

EGRE 435. Microscale and Nanoscale Fabrication. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 306 and EGRE 334, both with a minimum grade of C. This course presents the design tools and techniques for designing a fabrication process as well as a device design and layout for advanced microscale and nanoscale devices. A number of different types of device technologies are covered, incorporating electronic, micromechanical and microfluidic devices and sensors. In the laboratory section of the course, students work in design teams to develop a complete fabrication process and design layout for a microscale device to meet appropriate engineering standards and multiple realistic constraints. Computer simulations and computer-aided design tools are used in the final design. The laboratory section of this course accomplishes the design phase of the senior design capstone project, which is presented at the end of semester and fabricated in the subsequent course, EGRE 436.

EGRE 436. Advanced Microscale and Nanoscale Fabrication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 435 with a minimum grade of C. This course presents a detailed analysis of the physics and modeling of the fundamental processes used in semiconductor processing. Emphasis is placed on the non-ideal effects that cause realistic processes to deviate from first order models, including second order effects such as interactions on the atomic level and the influence of crystal defects. Processes covered in detail include oxidation, diffusion, ion implantation, thin film deposition and plasma etching techniques.

EGRE 444. Communication Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 336 with a minimum grade of C. Design and analysis of analog and digital communication systems, pulse modulation, information and digital transmission, digital modulation, information theory and coding will be treated. Emphasis is placed on the student gaining an appreciation for and an understanding of the role of optimization and trade-offs by considering bandwidth requirements, signal-to-noise ratio limitations, complexity and cost of analog and digital communication systems.

EGRE 454. Automatic Controls. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 335, EGMN 305 or EGMN 315 with a minimum grade of C. For computer engineering or electrical engineering majors, the prerequisite is EGRE 335 with a minimum grade of C. This course covers the design and analysis of linear feedback systems. Emphasis is placed upon the student gaining mathematical modeling experience and performing sensitivity and stability analysis. The use of compensators to meet systems design specifications will be treated. Topics include: an overview and brief history of feedback control, dynamic models, dynamic response, basic properties of feedback, root-locus, frequency response and state space design methods. The laboratory will consist of modeling and control demonstrations and experiments of single-input/single-output and multivariable systems, analysis and simulation using MATLAB/Simulink and other control system analysis/design/implementation software.

EGRE 455. Control Systems Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 454 with a minimum grade of C. This course covers the use of state space methods to model analog and digital linear and nonlinear systems. Emphasis is placed on the student gaining mathematical modeling experience, performing sensitivity and stability analysis and designing compensators to meet systems specifications. Topics treated will include a review of root locus and frequency design methods, linear algebraic equations, state variable equations, state space design and digital control systems (principles and case studies). The students will use complex dynamic systems for analysis and design.

EGRE 471. Power System Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 309 with a minimum grade of C. Provides a comprehensive overview of electrical power system operation and design. Students develop models and tools for investigating system behavior and have opportunities for using those tools in design processes. At the completion of the course students will be able to develop appropriate models for an interconnected power system, perform power flow analysis, economic dispatch, power system protection and controls. Students will also be able to write a basic power flow computer program.

EGRE 491. Special Topics. 1-5 Hours.

Semester course; variable hours. 1-5 credits. May be repeated with different topics for a total of 21 credits. Advanced study of a selected topic in electrical or computer engineering. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

EGRE 492. Independent Study in Electrical and Computer Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. May be repeated with different content for a total of 9 credits. Prerequisite: permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized electrical or computer engineering problems through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required.

Engineering (ENGR)

ENGR 100. Engineering Student Success. 0 Hours.

Semester course; seminar hours. 0 credits. Enrollment is restricted to new first-year students in the School of Engineering; required for students admitted conditionally. Students will meet for a 90-minute class once per week for five weeks. The course is dedicated to helping students understand the expectations and responsibilities of being a college student. Presentations will center on planning the semester, academic professionalism, study skills and test-taking strategies, financial literacy, health and wellness, time management, and the Honor Code. Seminars will be supplemented throughout the semester with online assignments to reinforce the discussions. Graded as pass/fail.

ENGR 101. Introduction to Engineering. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: admission to the School of Engineering or permission of instructor. Introduces basic circuits including resistors, diodes, transistors, digital gates and motors. Simple electromechanical systems are considered including motors, gears and wheels. The laboratory introduces fundamental circuit testing and measurement, and proper laboratory notebook writing; students are required to analyze, build and test a digitally controlled robot.

ENGR 111. Innovation Shop Training I. 0.5 Hours.

Semester course; 1 laboratory hour. 0.5 credits. Enrollment restricted to students in the School of Engineering. The course provides training on innovation shop safety, includes a tour of the shop, measuring and layout tools and techniques, use of general manual and powered hand tools. Students will be instructed on the use of a bench-top drill press, deburring and finishing tools, 3D printing, laser engraving and thermoforming equipment. Students need to achieve a minimum score of 76% in the class to attain Level I (Blue) certification. Only certified students have permission to use tools and equipment covered in this training. Graded as Pass/Fail.

ENGR 121. Engineering Fundamentals. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Open only to non-engineering majors in Certificate in Product Innovation program. Introduces engineering fundamentals to students from non-engineering disciplines. Particular focus is the engineering problem-solving process as applied to open-ended problems. Students will be introduced to the different types of engineering, examine engineering issues and apply the engineering problem-solving process.

ENGR 211. Innovation Shop Training II. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: ENGR 111. Enrollment restricted to students in the School of Engineering. The course provides training on machine/innovation shop safety, blueprint reading, measuring and layout tools and techniques, and use of general and powered hand tools. Students will be instructed on sawing, sanding, drilling and tapping operations, 3D printing and laser engraving/cutting equipment. Hands-on graded assignment is the part of the course.

ENGR 291. Special Topics in Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. Prerequisite: to be determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Graded as pass/fail or normal letter grading at the option of the instructor. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

ENGR 296. Part-time Internship Experience. 0 Hours.

Semester course; 0 credit. Students may attempt this course a total of six times. Enrollment restricted to School of Engineering majors. The student works part time in an approved internship and must work a minimum of 90 hours, but less than 300 hours during the semester. The student works to meet learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor and student both complete evaluations of the learning experience. Graded pass/fail.

ENGR 303. Junior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. This course provides students an opportunity to explore business and leadership topics. Topics include the fundamentals of product design and new product development, manufacturing and quality systems, finances and financial reports, ethics in the workplace, intellectual property, teamwork, leadership and communications. Students will be assigned selected readings, written compositions and oral presentations. This course prepares the student to participate in the Engineering Laboratory/Manufacturing Internship.

ENGR 311. Innovation Shop Training III. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: ENGR 211. Enrollment is restricted to students with Level II (Red) certification. The Level III (Green) course provides basic training on set-up and operation of manual milling machines and the lathe. The course covers cutting tool, speed and feed calculation. Students must develop a technological process and machine metal parts per assigned drawings on vertical mill and lathe. They will also use other techniques and equipment that were covered in previous levels. Students need to achieve a minimum score of 76 % in the class to attain Level III (Green) certification. Only certified students have permission to use tools and equipment covered in this training.

ENGR 395. Professional Development. 1 Hour.

Semester course; 1 lecture and 1 workshop hour. 1 credit. Enrollment is restricted to majors in the School of Engineering. Professional development course to help prepare students to find a job and succeed in a professional environment, and specifically to work as an intern or in a cooperative education position. Topics covered include career paths; job searches; resume and cover letter writing; preparing for the interview; personal assessment of interests, values and strengths; networking; professional and ethical behavior on the job; overview of legal issues related to hiring, such as nondisclosure agreements and noncompete clauses; overview of personal finance management at the first job; workplace safety; and expectations and requirements for internships and cooperative education positions.

ENGR 396. Internship Experience. 0 Hours.

Semester course; 0 credit. Students may attempt this course a total of three times. Enrollment restricted to School of Engineering majors. The student works in an approved internship and must work a minimum of 300 hours during the semester. The student works to meet learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor and student both complete evaluations of the learning experience. Graded pass/fail.

ENGR 398. Cooperative Education Experience. 0 Hours.

Semester course; 0 credits. Students may attempt this course a total of four times. Prerequisite: ENGR 395. Restricted to School of Engineering majors in good academic standing. The student works full-time in an approved cooperative education position. The student works to meet specific learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor/mentor and student both complete midterm and final evaluations of the learning experience. Graded pass/fail.

ENGR 399. Cooperative Education Experience II. 3 Hours.

Semester course; 3 credits. Prerequisite: ENGR 398. Restricted to School of Engineering majors in good academic standing. A student that has completed at least one work term in a full-time approved cooperative education position completes an additional full-time work term. The student works to meet specific learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor/mentor and student both complete midterm and final evaluations of the learning experience.

ENGR 402. Senior Design Studio (Seminar). 1 Hour.

Continuous courses; 1 lecture hour. 1-1 credit. Prerequisites: senior standing and participation in a senior design (capstone) project; completion of ENGR 402 to enroll in ENGR 403. This weekly seminar presents and discusses topics relevant to senior-level engineering students in support of the capstone project and upcoming graduation. A single course coordinator manages and administers the course and schedules the various faculty lectures and guest speakers. Topics include, but are not limited to, the following: proposal writing, project planning and management, scheduling resources and budgeting for technical projects, patents and intellectual property, quality systems (six sigma, ISO standards, statistical process control), entrepreneurship, creativity and innovation and professional registration.

ENGR 403. Senior Design Studio (Seminar). 1 Hour.

Continuous courses; 1 lecture hour. 1-1 credit. Prerequisites: senior standing and participation in a senior design (capstone) project; completion of ENGR 402 to enroll in ENGR 403. This weekly seminar presents and discusses topics relevant to senior-level engineering students in support of the capstone project and upcoming graduation. A single course coordinator manages and administers the course and schedules the various faculty lectures and guest speakers. Topics include, but are not limited to, the following: proposal writing, project planning and management, scheduling resources and budgeting for technical projects, patents and intellectual property, quality systems (six sigma, ISO standards, statistical process control), entrepreneurship, creativity and innovation and professional registration.

ENGR 410. Review of Internship. 1 Hour.

Semester course; 1 credit. Prerequisites: chemical, electrical and computer, or mechanical engineering major and experience to satisfy the engineering internship requirements. Students complete oral presentations and written reports summarizing the internship experience.

ENGR 411. Fundamentals of Engineering Exam Preparation. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: senior or graduate standing, or permission of instructor. This course prepares students for taking the fundamentals of Engineering Exam. Passing the FE Exam is the first step to getting a Professional Engineering license. This course is not intended to teach the various subject matters, but to review the subject areas and help students prepare as well as possible for the examination.

ENGR 490. Engineering Seminar. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different content. Prerequisite: permission of the instructor. A series of specialized topics in engineering that are of general interest but not covered by an existing course or program. Lectures will be presented in seminar format by speakers from business, industry, government and academia. Subjects will be multidisciplinary in nature. Graded as pass/fail or normal letter grading at the option of the instructor.

ENGR 491. Special Topics in Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. Prerequisite: determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Graded as pass/fail or normal letter grading at the option of the instructor. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

ENGR 492. Independent Study in Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. May be repeated with different content. Prerequisite: permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required. Graded as pass/fail or normal letter grading at the option of the instructor.

ENGR 496. Internship Review. 0 Hours.

Semester course; 0 credits. Prerequisite: ENGR 296 or ENGR 396. Restricted to School of Engineering majors. This course is to be taken following the completion of a minimum of 300 hours of approved internship experience relevant to the student's major and documents that a student has fulfilled all internship requirements, including a final evaluation by the employer, a final self-evaluation, a final report describing the experience and a final oral presentation about the experience. Graded pass/fail.

ENGR 497. Vertically Integrated Projects. 1,2 Hour.

Semester course; 3 or 6 laboratory hours. 1 or 2 credits. May be repeated for a maximum total of 8 credits. Prerequisites: permission of the project faculty adviser. This course provides undergraduate students the opportunity to participate in multiyear, multidisciplinary projects under the guidance of faculty and graduate students in their areas of expertise. As they address research and development issues, students learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team. Students must earn a minimum of 4 credits in ENGR 497 with a minimum grade of C in order for these credits to be eligible to count toward a technical or departmental elective. More restrictive requirements may be imposed by individual departments.

ENGR 498. Review of Cooperative Education Experience. 0 Hours.

Semester course; 0 credits. Prerequisite: ENGR 398. Restricted to School of Engineering majors. This course is completed following the final work term of a cooperative education experience and is required to obtain transcript notation to document that a student has fulfilled all the requirements of the school's cooperative education program. The requirements include a final evaluation by the employer, a final self-evaluation, a final report describing the experience and a final oral presentation about the experience.

Mechanical and Nuclear Engineering (EGMN)

EGMN 102. Engineering Statics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 with a minimum grade of C or permission of instructor. Corequisite: PHYS 207 or permission of instructor. The theory and application of engineering mechanics applied to the design and analysis of rigid structures. Equilibrium of two- and three-dimensional bodies. The study of forces and their effects. Applications to engineering systems.

EGMN 103. Mechanical and Nuclear Engineering Practicum I. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Students will perform a sequence of laboratory modules designed to provide practical hands-on exposure to important topics, equipment and experimental methods in mechanical and nuclear engineering. Topics covered include communication, optimization, reverse engineering, mechanics, thermodynamics and electric circuits.

EGMN 190. Introduction to Mechanical and Nuclear Engineering. 1 Hour.

Semester course; 1 lecture hour. 1 credit. The course will introduce students to the engineering profession, present basic mechanical and nuclear engineering concepts and include seminars presented by alumni, industry and experts in their fields.

EGMN 201. Dynamics and Kinematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207, EGMN 102 and MATH 201, with a minimum grade of C in each, or permission of the instructor. Kinematics and kinetics of particles. Kinematics of rigid bodies; translation and fixed-axis rotation relative to translating axes, general planar motion, fixed-point rotation and general motion. Kinetics of rigid bodies: center of mass, mass moment of inertia, product of inertia, principal-axes, parallel-axes theorems. Planar motion, work-energy method. Design of cams, gears and linkages.

EGMN 202. Mechanics of Deformables. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 102 and MATH 201, with a minimum grade of C in both, or permission of the instructor. An introductory course covering the mechanics of deformable solids. Subjects include stress, strain and constitutive relations; bending of beams; torsion; shearing; deflection of beams; column buckling; fatigue; failure theory; analysis and design of bar-type members.

EGMN 203. Mechanical and Nuclear Engineering Practicum II. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Students will perform a sequence of laboratory modules designed to provide practical hands-on exposure to important topics, equipment and experimental methods in mechanical and nuclear engineering. Topics covered include additive manufacturing, radiation detection and measurement, radiation shielding, data acquisition and computer interfacing, coding for instrumentation control.

EGMN 204. Thermodynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and MATH 201 with a minimum grade of C in both, or permission of the instructor. Fundamental concepts of thermodynamics; first and second law of thermodynamics; entropy and equilibrium; equations of state; properties of pure fluids; molecular interpretation of thermodynamic properties; phase equilibria; work and heat; power cycles; chemical reactions.

EGMN 215. Engineering Visualization and Computation. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Enrollment restricted to mechanical engineering majors or with permission of the instructor. Programming in Excel and MATLAB will be introduced. The creation and interpretation of graphical communication for engineering students. Two- and three-dimensional part and assembly representations. Dimensioning and tolerancing as a link between design and manufacturing. An introduction to solid modeling and virtual prototyping. The course will impart proficiency in computer and graphical applications of fundamental and practical importance to engineering students.

EGMN 300. Mechanical Systems Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 201 and EGMN 202, with a minimum grade of C in both, or permission of the instructor. Basic principles of applied mechanics and materials employed for the design of machine elements and mechanical systems; state of stress, deformation and failure criterion is applied to bearings, brakes, clutches, belt drives, gears, chains, springs, gear trains, power screws and transmissions.

EGMN 301. Fluid Mechanics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and EGMN 204, with a minimum grade of C in each, or permission of instructor. Corequisite: MATH 301 or permission of instructor. Basic and applied fluid mechanics; fluid properties; application of Bernoulli and Navier-Stokes equations; macroscopic mass, momentum and energy balances; dimensional analysis; laminar and turbulent flow; boundary layer theory; friction factors in pipes and packed beds; drag coefficients; compressible flow; flow measurements; numerical simulation; applications to the operation and design of turbo machinery.

EGMN 302. Heat Transfer. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 204 and EGMN 301, MATH 301 and MATH 307, with a minimum grade of C in each, or permission of instructor. This course includes an overview of the basic modes of heat transfer: conduction, convection and radiation. It provides an in-depth discussion of transient and steady-state heat conduction in one-, two- and three-dimensional space, and both analytical and numerical approaches are discussed. Additional concepts include free and forced convection in external and internal flow configurations.

EGMN 303. Thermal Systems Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, EGMN 204 and EGMN 301, with a minimum grade of C in each, or permission of the instructor. Fundamentals of heat transfer, thermodynamics and fluid mechanics applied to the analysis, design, selection and application of energy conversion systems.

EGMN 305. Sensors/Measurements. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 with a minimum grade of C, PHYS 208 and STAT 541; or permission of instructor. Introduction to sensors and their utilization for measurement and control; sensor types: electromechanical, electro-optical, electro-chemical; applications in medicine, chemical manufacturing, mechanical control and optical inspection.

EGMN 309. Material Science for Engineers. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 101 or permission of instructor. The study of materials from a microscopic or atomic level. Consideration of mechanical, electrical, thermal, magnetic and optical properties of metals, ceramics, polymers and composites. Thermal processing for modification of properties, dislocation and phase transformation. Material selection for design with consideration of economic, environmental and societal issues.

EGMN 311. Solid Mechanics Lab. 1.5 Hour.

Semester course; 0.5 lecture and 3 laboratory hours. 1.5 credits. Prerequisites: EGMN 201, EGMN 202 and UNIV 200, all with a minimum grade of C, or permission of the instructor. Experiments will be conducted on fundamental principles of solid mechanics, materials and dynamics. Topics covered include testing of materials for tensile, compression, bending and torsional loads, vibrations and material microstructure.

EGMN 312. Thermal Sciences Lab. 1.5 Hour.

Semester course; 0.5 lecture and 3 laboratory hours. 1.5 credits. Prerequisites: EGMN 301 and UNIV 200, each with a minimum grade of C, or permission of the instructor. Experiments will be conducted on fundamental principles of fluid mechanics, thermodynamics and heat transfer. Topics covered include hydrostatics, Bernoulli equation, impact jets, aerodynamic force, heat pump thermodynamics cycles, heat exchangers and convection heat transfer.

EGMN 315. Process and Systems Dynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, EGRE 206, EGMN 201 and PHYS 207, all with a minimum grade of C; or permission of instructor. Undergraduate course covering the analysis of chemical, fluid, mechanical and electrical dynamic systems. Pedagogically, a single approach is taught that applies to any of the systems in any of these disciplines using conservation equations and constitutive relationships to build the systems of differential equations needed for the analysis. The mathematical structures of the types of differential equations typically generated in dynamic physical systems are reviewed and both analytical and numerical solution techniques are taught. Finally, the tools used to develop control components for systems in these areas are covered along with the mathematical tools (e.g., Laplace transforms) needed for their analysis.

EGMN 321. Numerical Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and EGMN 215, with a minimum grade of C in both, or permission of instructor. A study of numerical algorithms used in error analysis, computing roots of equations, solving linear algebraic equations, curve fitting, numerical differentiation and integration, numerical methods for ordinary differential equations and a brief introduction to numerical methods for partial differential equations. The course content is tailored for mechanical engineering applications.

EGMN 351. Nuclear Engineering Fundamentals. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Restricted to mechanical engineering majors. Prerequisite: MATH 200 with a minimum grade of C or permission of the instructor. An introductory course to familiarize students with the concepts, systems and application of nuclear energy. Topics include radioactivity, fission, fusion, reactor concepts, biological effects of radiation, nuclear propulsion and radioactive waste disposal. Designed to provide students with a broad perspective of nuclear engineering.

EGMN 352. Nuclear Reactor Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301; and EGMN 359 or EGMN 455 with a minimum grade of C; or permission of instructor. This course introduces the fundamental properties of the neutron, the reactions induced by neutrons, nuclear fission, the slowing down of neutrons in infinite and finite media, diffusion theory, the 1-group or 2-group approximation, point kinetics, and fission-product poisoning. Provides students with the nuclear reactor theory foundation necessary for reactor design and reactor engineering problems.

EGMN 355. Radiation Safety and Shielding. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGMN 351 with a minimum grade of C, or permission of instructor. Fundamentals of radiation safety and shielding with focus on sources of radioactivity, interaction of radiation with matter, biological effects of radiation, dosimetry, attenuation of gamma rays and neutrons and effectiveness of shielding methods.

EGMN 356. Nuclear Instrumentation and Measurements. 3 Hours.

Semester course; 6 laboratory hours. 3 credits. Prerequisite: EGMN 355 with a minimum grade of C or permission of instructor. Provides an in-depth study of radiation detection systems. Students will understand both the practical operation of detection systems as well as the physical processes involved in radiation detection, attenuation and shielding.

EGMN 359. Nuclear Power Plants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGMN 351 with a minimum grade of C. Corequisite: EGMN 204 or permission of instructor. Design and analysis of nuclear power plants – both existing and planned. Topics include survey of reactor types and common design characteristics; the conversion of thermal energy to electricity; the control and operation of nuclear reactors through an analysis of the coupling of the reactors and the power plant; reactor transient analysis; and nuclear safety design.

EGMN 401. Mechanical Engineering Leadership. 3 Hours.

Semester course; 9 laboratory hours. 3 credits. Enrollment restricted to students with junior or senior standing in mechanical engineering and permission of the instructor. Senior/junior students will serve as lab teaching assistants in EGMN 103, EGMN 203, EGMN 215, EGMN 311 or EGMN 312. Leadership skills will be honed as the senior/junior students guide, lead and supervise other students as they complete hands-on learning modules and/or design, conduct, analyze and report on experiments in one of these lab courses.

EGMN 402. Senior Design Studio (Laboratory/Project Time). 2 Hours.

Semester course; 6 laboratory hours. 2 credits. Prerequisite: five courses from EGMN 300, 301, 302, 303, 315, 321, 355, 416, 420, 421 and 455; and two courses from EGMN 300, 303 and 420. All prerequisite courses must be completed with minimum grades of C. Enrollment restricted to students with senior standing participating in a senior design (capstone) project. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGMN 403. Senior Design Studio (Laboratory/Project Time). 2 Hours.

Continuous course; 6 laboratory hours. 2 credits. Prerequisite: senior standing and participation in a senior design (capstone) project; EGMN 402. A minimum of six laboratory hours per week dedicated to continuing the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

EGMN 416. Mechatronics. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGRE 206 with a minimum grade of C, or permission of instructor. Lecture materials and laboratory experiments focus on the fundamentals of design-oriented mechanical, electrical and computer systems integration. Specifically, students learn analog and digital electronic design, data acquisition, transducers, actuator technologies and control, design with microprocessors and embedded electronics, and application of control theory.

EGMN 418. HVAC: Heating, Ventilation and Air Conditioning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 301, EGMN 302 and EGMN 303. Introduction to the fundamentals of HVAC systems, including basic terminology, psychometrics, HVAC system components, types of HVAC systems for various building requirements, physiological considerations and environmental indices, control of thermal comfort and indoor air quality, heat gain or loss in spaces to be conditioned, basic heating and cooling load calculations.

EGMN 420. CAE Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 201 and EGMN 215, with a minimum grade of C in both, or permission of instructor. Review of geometric modeling, engineering visualization tools applicable to engineering design. Develop visual thinking and communication skills with assistance of computer modeling tools. Emphasis placed on creative design, application of physical laws, and hands-on virtual or physical projects. Topics include review of kinematics/dynamics of commonly used planar mechanisms and programming techniques for motion simulation. Interdisciplinary projects will be assigned to assess students' design knowledge.

EGMN 421. CAE Analysis. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: EGMN 202 and EGMN 215; and MATH 301 and MATH 307, all with a minimum grade of C, or permission of the instructor. Application of computer-aided techniques to the analysis of engineering problems utilizing linear algebra, computer calculations of matrices and numerical solution of governing differential equilibrium equations common to all fields of engineering. Students will be exposed to formulations of finite element methods of analysis. Emphasis is placed on practical aspects of structural FE modeling. Analysis programs such as ANSYS, MSC/PATRAN, MSC/NASTRAN and/or MATLAB are utilized.

EGMN 422. Design and Additive Manufacturing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 420 or permission of the instructor. Design and additive manufacturing is the use of layer-based processes for producing parts directly from computer-aided design models without part-specific tooling. In this course students will learn about various AM technologies focusing upon their potential to support rapid prototyping and manufacturing processes coupled with the important research challenges associated with AM. This course will expand students' knowledge in design and applied engineering as they model, fabricate, test, discuss and iterate upon mechanical 3D objects they design throughout the semester.

EGMN 425. Introduction to Manufacturing Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Basic principles of systems analysis and modeling applied to manufacturing processes and operations; numerical control, programmable controllers, flexible manufacturing systems, group technology, process planning and control, modeling and simulation of factory operations.

EGMN 426. Manufacturing Processes. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Introduction to the operation and design of metal fabrication processes; analysis of metal casting, extrusion, rolling, forging, wire and rod drawing; review of metal removal and joining methods; economic and business considerations.

EGMN 427. Robotics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Introduction to the state-of-the-art and technology of robotics and its applications for productivity gain in industry.

EGMN 428. Polymer Processing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 301 and 302, with a minimum grade of C in both, or permission of the instructor. Basic principles of momentum and heat transfer applied to the analysis of polymer processing operations; introduction to polymer rheology; operation and design aspects of extruders, blown film, injection molding, thermoforming and compression molding machinery.

EGMN 435. Design for Manufacturing and Assembly. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Methodologies used in the synthesis and analysis of product design in order to optimize manufacturing and assembly; relationship of design to the production processes, materials handling, assembly, finishing, quality and costs with emphasis on both formed and assembled products.

EGMN 436. Engineering Materials. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Materials properties and their modification as related to engineering properties and design; elastic and plastic stress-strain behavior of materials along with diffusion in solids, phase equilibria, and phase transformations; materials selection considerations include design, fabrication, mechanical failure, corrosion, service stability as well as compatibility and function in the human body.

EGMN 437. Principles of Polymer Engineering. 3 Hours.

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: EGMN 202 with a minimum grade of C, or permission of the instructor. Basic principles of mechanics applied to the mechanical design and fabrication of polymers; introduction to polymer structure, rubber elasticity, and viscoelasticity; mechanical properties, plastic part design and plastic materials selection; fabrication processes.

EGMN 450. Nuclear Reactor Control and Dynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, EGMN 201 and EGMN 455, with a minimum grade of C in each, or permission of instructor. An introduction to control theory and its applications for nuclear engineering students. Modeling and development of differential equations for nuclear systems. Analysis of nuclear reactor dynamics in the time and frequency domains. Application of feedback control techniques to reactor operation, stability and performance.

EGMN 451. Nuclear Safety and Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGMN 455 with a minimum grade of C, or permission of the instructor. A study of technological risks and security issues related to nuclear power. Analysis of nuclear reactor system components and operational features that are relevant to safety; reactor containment; safety analysis of nuclear power plants using deterministic and probabilistic models; methods for human, environmental and ecological risk assessment; NRC regulations and procedures; safeguarding against natural (earthquake, tornadoes) and human (domestic and international) threats; classification and consequences of accidents including historical case studies.

EGMN 453. Economics of Nuclear Power Production. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGMN 352 with a minimum grade of C or permission of instructor. Fundamentals of engineering economic analysis are applied to energy supply, demand, prices and production with specific emphasis on nuclear energy, the capital cost of nuclear power plants, the nuclear fuel cycle and associated energy technologies.

EGMN 455. Nuclear Power Plants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 204 and EGMN 352, each with a minimum grade of C, or permission of instructor. Design and analysis of nuclear power plants. Review of thermodynamic cycles and reactor types; analysis of the coupling of the reactor and the power plant; thermal and mechanical design of steam turbines; turbogenerators; auxiliary systems; design synthesis and heat balance calculations; operation of nuclear reactors.

EGMN 456. Reactor Design and Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 302, EGMN 303 and EGMN 352; and EGMN 359 or EGMN 455, all with a minimum grade of C; or permission of instructor. Engineering principles of nuclear reactors, emphasizing power reactors. Specific topics include power plant thermodynamics, reactor heat generation and removal (single-phase as well as two-phase coolant flow and heat transfer), and structural mechanics. The course also covers engineering considerations in reactor design.

EGMN 491. Special Topics in Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. May be repeated with different content. Prerequisite: determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

EGMN 492. Independent Study in Engineering. 1-5 Hours.

Semester course; variable hours. 1-5 credits. May be repeated with different content. Enrollment requires permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required.

College of Health Professions

Allied Health Professions (ALHP)

ALHP 310. Introduction to Health Care Professions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an introduction to health professions and careers with an emphasis on allied health. Introduces concepts of professionalism and interprofessional collaboration in the health care services environment; basic knowledge of issues and trends in health promotion and delivery; and cultural and economic factors impacting health equity and access.

ALHP 320. Person-centered Care. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an introduction to person-centered care and examines the relationships between patients, their families and health care providers. Emphasizes the role that these relationships and interactions play in the current health care services system and how they lead to better quality of care, increased satisfaction with health care providers and improved health outcomes.

ALHP 325. Introduction to Rehabilitation Services. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an overview of rehabilitative services. Familiarizes students in the areas of chronic illness and disability in interdisciplinary rehabilitation professions and settings. Introduces public policy and legislation pertinent to rehabilitation services.

ALHP 330. Human Growth and Development for the Health Professions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the major theories and research of human development across the lifespan. Focuses on physical, emotional, social and cognitive aspects. Emphasizes how developmental processes relate to persons, including those who experience illness and disability.

ALHP 340. Health Care Technology and Innovation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Emphasizes the "hows and whys" of recent advances and disrupters in health care information systems. Students will design a life-saving (or money-making) app.

ALHP 391. Special Topics. 1-4 Hours.

Semester course; 1-4 credits. Prerequisite: permission of instructor. Offered for undergraduate level. Interdisciplinary study through lectures, tutorial study or independent research of selected topics not provided in other courses.

ALHP 410. Professional and Clinical Ethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Emphasizes the ethical responsibility of health care providers and health services professionals. Reviews the code of ethics for professional and personal integrity. Applies the principles of ethics toward informed decision-making.

ALHP 415. Health Care Financing and Budgeting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines payment for health care services. Shows how the results of financial operations are recorded and evaluated. Develops basic skills for financial management of health care organizations.

ALHP 416. Health Care Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 210. Provides an introduction to microeconomic concepts and theories as tools for understanding health and health care issues. Explores the fundamentals of health and health services as markets and how these may differ from markets for other goods and services. Describes market failure and the role of government. Examines economics as a way of approaching issues of public policy in the organization and financing of health care services.

ALHP 420. Health Care Leadership Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on the development of leadership skills within a health care services setting. Introduces students to positive organizational scholarship and its impact on organizational performance/outcomes and employee engagement. Provides students with an opportunity to identify and develop their leadership characteristics.

ALHP 425. Health Care Management and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the role of managers in health care organizations and effective management of organizational performance, including quality.

ALHP 430. Overview of Research in the Health Professions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 and STAT 210. Emphasizes the preparation of professionals as consumers of research who will find, understand, interpret and apply research findings in their professional practice. Stresses the capacity to critically analyze and utilize research findings and evaluate the outcomes of programs, interventions and services.

ALHP 435. Health Care Career Development and Planning in Allied Health Professions. 3 Hours.

Semester course; 2 lecture and 1 field experience hours (60 service hours). 3 credits. Prerequisite: ALHP 310. Emphasizes the preparation of students for job search or future professional and educational opportunities. Provides an opportunity for service learning and relevant experiential, applied learning in a health services field.

Clinical Laboratory Sciences (CLLS)**CLLS 201. Introduction to Clinical Laboratory Science. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open to students on the Monroe Park Campus who are interested in clinical laboratory science/medical technology as a career. Presentation and discussion of clinical laboratory science including an introduction to each of the specific areas of concentration, job opportunities in the profession and a tour of a hospital laboratory. Graded as pass/fail.

CLLS 300. Basic Concepts. 1.5 Hour.

Semester course; 1 lecture and 1 laboratory hours. 1.5 credits. An introduction to the basic concepts/techniques applicable to all laboratory science areas. Includes optical physics, quality control, laboratory safety, medical terminology and pipetting techniques along with other basic subjects.

CLLS 301. Hematology. 1.5-3.5 Hours.

Semester course; 2 lecture and 3 laboratory hours. 1-5-3.5 credits. May be repeated for 3.5 credits. Enrollment restricted to CLS majors. Provides a study of the blood and blood-forming tissues. Focuses on basic hematologic techniques and accurate identification of normal and abnormal hematologic cells. Introduces the hemostatic mechanism. Correlates the roles of normal hematologic cells with normal hematologic homeostasis. This course qualifies for the option of proficiency credits for certified medical laboratory technicians.

CLLS 302. Abnormal Hematology. 1.5-4 Hours.

Semester course; 2.5 lecture and 3 laboratory hours. 1.5-4 credits. May be repeated for a total of 4 credits. Prerequisite: CLLS 301. Enrollment restricted to CLS majors. Provides a study of the blood and blood-forming tissues. Focuses on basic hematologic techniques and normal and abnormal cell identification accuracy. Correlates the roles of abnormal cells with pathological conditions. Focuses on abnormal hemostasis. This course qualifies for the option of proficiency credits for certified medical laboratory technicians.

CLLS 304. Urine and Body Fluid Analysis. 1-2 Hours.

Semester course; 1.5 lecture and 1 laboratory hours. 1-2 credits. A study of the principles and practices of urinalysis, kidney function, cerebrospinal fluid and other body fluids.

CLLS 306. Immunohematology. 2.5-4.5 Hours.

Semester course; 2.5 lecture and 4 laboratory hours. 2.5-4.5 credits. Prerequisite: CLLS 310. A study of the theory and principles of blood banking with an emphasis on methods and techniques used in the laboratory for cell typing, cross-matching and antibody identification.

CLLS 307. Introduction to Pathogenic Microbiology. 1-3 Hours.

Semester course; 3 lecture hours. 1-3 credits. May be taken as 1 credit each for study of basic parasitology, mycology or virology. Includes fundamentals of parasites, fungi and viruses as potentially pathogenic microorganisms.

CLLS 308. Pathogenic Bacteriology. 3-5 Hours.

Semester course; 3 lecture hours and 4 laboratory hours. 3-5 credits. Emphasis is placed on pathogenic bacteria, techniques, pathogenesis, epidemiology, isolation and identification, and antimicrobial susceptibility testing.

CLLS 310. Clinical Immunology. 3-4.5 Hours.

Semester course; 3.5 lecture and 2 laboratory hours. 3-4.5 credits. Introduces the basic principles of immunology, serology and molecular diagnostics. Emphasis is placed on laboratory evaluation of the immune response including both cellular and humoral aspects. Serologic techniques are practiced in the laboratory sessions.

CLLS 311. Clinical Chemistry and Instrumentation I. 3-5 Hours.

Semester course; 3 lecture and 4 laboratory hours. 3-5 credits. A study of human physiology and metabolism in health and various disease states. Topics include energy and nitrogen metabolism and proteins in body fluids. Emphasis is placed on the application of quantitative analytical methods and instrumentation for the chemical characterization of body fluids to provide clinically useful information for the diagnosis and treatment of diseases.

CLLS 312. Clinical Chemistry and Instrumentation II. 4-5 Hours.

Semester course; 4 lecture and 2 laboratory hours. 4-5 credits. Prerequisite: CLLS 311 or permission of the instructor. A study of human physiology and metabolism in health and various disease states. Topics include water and ion balance, clinical enzymology, therapeutic drug monitoring, and toxicology. Emphasis is placed on the application of quantitative analytical methods and instrumentation for the chemical characterization of body fluids to provide clinically useful information for the diagnosis and treatment of diseases.

CLLS 337. Clinical Education. 1 Hour.

Semester course; 120 clock hours. 1 credit. Supervised clinical experience in hospitals across the state is designed to give the student a broader clinical education and to provide venipuncture experience. In addition to the application of academically acquired knowledge, this affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel is an important aspect of this affiliation. Graded as pass/fail.

CLLS 407. Interpretive Immunohematology. 2-2.5 Hours.

Semester course; 2.5 lecture hours. 2-2.5 credits. Prerequisites: CLLS 306 and 310, or permission of instructor. Advanced study of the principles of immunohematology and immunology with major emphasis on blood group systems and blood components. Includes the application of laboratory data and techniques to solve problems in blood banking and immunology.

CLLS 408. Advanced Microbiology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 307 and 308, or permission of instructor. Advanced study of the principles of pathogenic microbiology. Includes the application of laboratory data and techniques to solve problems in the clinical microbiology laboratory.

CLLS 409. Interpretive Hematology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 301-302 and 485, or permission of instructor. Advanced study of the principles of hematopoiesis and their pathophysiological correlation to hematological disorders. Interpretation of morphological findings are correlated with case histories. Includes homeostatic problems.

CLLS 410. Advanced Clinical Chemistry and Instrumentation. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 311-312, or permission of instructor. Presents an advanced study of (1) the principles of clinical chemistry as related to intermediary metabolism and pathology and (2) laboratory and hospital information systems. Includes the application of laboratory data and technologies to solve problems in analytical methods and instruments.

CLLS 411. Principles of Education/Management. 2.5-3.5 Hours.

Semester course; 3 lecture hours. 2.5-3.5 credits. Introduces fundamental educational theories and practice, principles of management and employee relations and health-care issues from a global perspective with an emphasis on multicultural diversity. Stresses the application of these theories in the clinical laboratory.

CLLS 412. Senior Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Seminars are presented on various aspects of professionalism, experimental design and critical evaluation of scientific literature. A simulated registry exam is given at the conclusion. Graded as pass/fail.

CLLS 415. Special Topics in Clinical Laboratory Sciences. 1-6 Hours.

Semester course; 1-6 credits. Course provides for tutorial studies, laboratory experience and/or library assignments in specialized areas for those students who have previous course work or laboratory experience in a specific subject.

CLLS 438. Research Paper. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course is designed to introduce the student to the fundamentals of scientific writing.

CLLS 483. Biochemistry Practicum. 1-4.5 Hours.

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 311-312. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, students are expected to perform and sign out routine laboratory work under supervision. Graded as pass/fail.

CLLS 485. Hematology Practicum. 1-4.5 Hours.

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302. Individual participation in hospital hematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work under supervision. Graded as pass/fail.

CLLS 493. Clinical Microbiology Practicum. 1-4.5 Hours.

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 307-308. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

CLLS 494. Miscellaneous Clinical Practicum. 1-4.5 Hours.

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302, 308, 310, 311-312 or permission of instructor. Students gain practical experience in the use of instruments and the performance of procedures by working with the clinical staff. After gaining competence, students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

CLLS 496. Blood Bank Practicum. 1-4.5 Hours.

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisite: CLLS 306. Individual participation in hospital blood bank laboratories and Virginia Blood Services. Students gain practical experience in the use of procedures and instruments by working with the staff. Donor drawing and component preparation is observed. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

Clinical Radiation Sciences (CLRS)**CLRS 101. Introduction to Clinical Radiologic Sciences. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Presentation and discussion of the art and science of medical imaging and therapeutics. Radiography, nuclear medicine, radiation therapy, sonography and other radiologic technologies will be discussed in terms of career specialties within the profession.

CLRS 201. Radiographic Imaging and Exposure I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 205. Corequisites: CLRS 232 and CLRZ 201. Introduction to radiographic equipment and the imaging process. Covers topics including equipment operation and manipulating radiation exposure to produce quality radiographs. Presents information that prepares students for clinical practice. Emphasizes clinical problem-solving as it relates to patient variables, pathology and technical exposure factors.

CLRS 203. Pathophysiology I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

CLRS 204. Pathophysiology I and II. 3 Hours.

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: BIOL 205, PHIS 206 and PHIZ 206. Completion of CLRS 203 to enroll in CLRS 204. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

CLRS 205. Exploring Radiologic Sciences. 1 Hour.

Semester course; 1 lecture hour. 1 credit. A general overview of the wide variety of imaging and treatment modalities in radiologic sciences will be presented. Emphasis will be on understanding how these modalities are utilized in today's complex health care environment, as well as the role of the technologist/therapist.

CLRS 206. Cross-sectional Anatomy. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisite: permission of instructor. A general overview of cross-sectional anatomy at representative levels will be presented. Emphasis will be on identifying major muscles, organs, bones and vessels on diagrams, photographs and images.

CLRS 208. Foundations of Patient Care. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Legal, ethical and technical foundations of patient care will be explored with emphasis on the application of these principles to common radiologic situations.

CLRS 211. Radiographic Procedures I. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: CLRS 208 with a minimum grade of C. Combines the study of anatomy and physiology and positioning for diagnostic radiographic examinations of the upper extremity, thorax, abdomen, lower extremity, spine and pelvis. Requires demonstration of competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment and evaluation of radiographs.

CLRS 212. Radiographic Procedures II. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisite: CLRS 211 with a minimum grade of C. Continuation of CLRS 211 with emphasis on anatomy and physiology and positioning for diagnostic radiographic examinations of routine contrast studies and basic headwork. Requires students to demonstrate competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment and evaluation of radiographs.

CLRS 232. Radiation Safety. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Provides an overview of radiation protection as it applies to the radiation sciences. Emphasizes radiation sources, detection and regulations. Discusses radiation protection responsibilities of the radiologic technologist for patients, personnel and the public.

CLRS 294. Introduction to Clinical Education I. 0.5 Hours.

Semester course; 60 clinical hours. 0.5 credit. Prerequisite: CLRS 208 with a minimum grade of C. Introduction to clinical experience supervised by clinical faculty and affiliate facility staff. Introduces students to the clinical process and equipment, and provides practical experience in routine, basic procedures.

CLRS 295. Introduction to Clinical Education II. 1 Hour.

Semester course; 120 clinical hours. 1 credit. Prerequisites: CLRS 201, 211, 232 and 294 with a minimum grade of C in all. Continued introduction to clinical experience supervised by clinical faculty and affiliate facility staff. Provides additional practical experience in routine, basic procedures.

CLRS 300. Introduction to Sonography. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course is restricted to students in the clinical radiation sciences program. Introduces sonography as a career to include ultrasound equipment operation, sonography safety, legal and ethical issues, ultrasound image orientation and interpretation, professional organizations, and employment opportunities.

CLRS 301. Sonography Physics and Instrumentation I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to clinical radiation sciences majors. Introduces ultrasound instrumentation, propagation principles and interactions to include, but not limited to, sound waves, interaction of sound with different mediums, transducer design, display modes, sound beams, resolution, ultrasound equipment function, 2-D and real-time imaging.

CLRS 302. Sonography Physics and Instrumentation II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 301. Enrollment restricted to clinical radiation science majors. Expands upon discussion of material introduced in prerequisite course along with implementing ultrasound instrumentation, propagation principles and interactions. Introduces new concepts such as sound waves, image processing, hemodynamics, Doppler, ultrasound artifacts and quality assurance.

CLRS 303. Orientation to Nuclear Medicine. 2 Hours.

Semester course; 1 lecture and 2 clinical hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232 both with a minimum grade of C. Designed to acquaint the student with the field of nuclear medicine in general and the Program in Nuclear Medicine Technology in particular. It also provides an introduction to clinical practice.

CLRS 305. Orientation to Radiation Therapy. 2 Hours.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232, both with a minimum grade of C. Introduction to the clinical process, equipment and history of radiation therapy. Information will be presented that prepares the student to begin clinical practice. Clinical rotations and lab exercises are designed to expose the student to various aspects of radiation therapy.

CLRS 309. Oncologic Patient Care. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 208 with a minimum grade of C. Pre- or corequisite: CLRS 305. Covers the basic concepts of patient care specific to radiation therapy, including consideration of physical and psychological conditions. Patient interactions, patient examinations, asepsis, local and systemic reactions, nutrition and medications are discussed. Factors influencing patient health during and following a course of radiation will be identified.

CLRS 311. Abdominal Sonography I. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Enrollment is restricted to clinical radiation science majors. Investigates cross-sectional anatomy, pathology, image production/interpretation and sonography scanning techniques/protocols related to abdominal sonography.

CLRS 312. Radiographic Procedures III. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 212 with a minimum grade of C. Continuation of CLRS 211 and 212 to cover additional and alternative positions for routine radiographic examinations as well as special studies of circulatory, reproductive, urinary, skeletal and central nervous systems. Discusses equipment, procedures and strategies for performing pediatric, trauma, mobile and operating room radiographic exams. Includes small group simulation opportunities.

CLRS 313. Abdominal Sonography II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 311. Enrollment is restricted to clinical radiation science majors. Investigates cross-sectional anatomy, pathology, image production/interpretation and sonography scanning techniques/protocols related to abdominal sonography, breast and small parts.

CLRS 314. Pathology and Treatment Principles I. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: CLRS 309 and CLRS 323 with a minimum grade of C in both. Presents the fundamentals of the disease processes for cancer of the following: skin, thorax, genitourinary, gynecological, head and neck, central nervous system, and breast. Discusses malignant condition, etiology and epidemiology, patient workup, and methods of treatment. Attention to patient prognosis, treatment results and the effects of combined therapies. Requires demonstration of competence in selected radiotherapeutic procedures, including positioning of simulated patients and the manipulation of equipment.

CLRS 316. Introduction to Vascular Sonography. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CLRS 302 or permission of the department chair. Enrollment is restricted to clinical radiation sciences majors or by permission of the department chair. Introduces basic anatomy, pathology and evaluation techniques of basic vascular anatomy, including venous, extracranial cerebrovascular and visceral vascular anatomy. Presents processes for performing venous, extracranial and visceral vascular protocols.

CLRS 317. Nuclear Medicine Procedures I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: two semesters of general chemistry. Pre- or corequisite: CLRS 303. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

CLRS 318. Nuclear Medicine Procedures II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 317 with a minimum grade of C. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

CLRS 319. Nuclear Medicine Procedures III. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 318 with a minimum grade of C. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

CLRS 320. Radiographic Imaging and Exposure II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 201 and CLRZ 201 both with a minimum grade of C. Emphasizes federal regulations and monitoring of the imaging system components that may affect radiographic quality through improper functioning. Provides in-depth exploration of digital imaging.

CLRS 321. Nuclear Medicine Physics and Instrumentation I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Pre- or corequisite: CLRS 303. Corequisite: CLRZ 321. Presents the physical principles of atomic structure, electromagnetic spectrum, units of measurement, radioactive decay and attenuation in matter. Operation of radiation equipment will include statistical applications and quality control procedures.

CLRS 322. Nuclear Medicine Physics and Instrumentation II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 317, CLRS 321 and CLRZ 321 with a minimum grade of C in all. Corequisite: CLRZ 322. Presents advanced applications in physics and the operating principles of nuclear medicine imaging devices and related quality control procedures.

CLRS 323. Radiation Therapy, Techniques and Applications. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Pre- or corequisite: CLRS 305. Presents the basic concepts of dosimetry and treatment planning. Various external beam techniques and applications, depth dose data and summation of isodose curves are discussed. Modalities of treatment, patient setup, dose measurement and verification also are included.

CLRS 325. Sonography Professional Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 311 and CLRS 329. Enrollment restricted to clinical radiation science majors. Integrates various didactic and clinical concepts as they relate to the professional practice of diagnostic medical sonography.

CLRS 329. Obstetric and Gynecologic Sonography I. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Enrollment is restricted to clinical radiation science majors. Introduces female cross-sectional anatomy, pathology, image production and interpretation, and scanning techniques/protocols related to basic obstetric and gynecologic sonography.

CLRS 331. Radiographic Imaging Equipment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 320 with a minimum grade of C. Presents the principles and operation of general and specialized X-ray equipment. Emphasizes the equipment necessary to perform radiographic, fluoroscopic and tomographic examinations.

CLRS 332. Radiographic Pathology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 204 and CLRS 393 with a minimum grade of C or permission of instructor. Provides introduction to the study of radiographic pathology through reading and observation of film interpretation. Emphasizes recognition of common disease processes as demonstrated radiographically and, via advanced imaging modalities; where appropriate, understanding how to vary positioning and techniques to produce optimally diagnostic images; and the role of different imaging modalities in the evaluation of disease.

CLRS 339. Obstetric and Gynecologic Sonography II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 329. Enrollment is restricted to clinical radiation science majors. Introduces maternal and fetal pathology, including fetal congenital abnormalities, placental and umbilical cord anomalies, and fetal neural, thoracic, cardiac, abdominal, urogenital and skeletal abnormalities. Image interpretation and scanning techniques/protocols related to obstetric sonography are discussed.

CLRS 341. Radiation Physics. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: PHYS 101, PHYZ 101 or PHYS 201 and CLRS 232 with a minimum grade of C. Discusses fundamentals of the atom, electricity and magnetism. Emphasizes the production of X- and gamma rays, and the interaction of radiation with matter.

CLRS 342. Physics for Radiation Therapy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 323 and CLRS 341 with a minimum grade of C in both. Includes a discussion of the properties of electromagnetic and particulate radiation. Details of production, interactions, treatment units, measurement of radiation, radioactivity and brachytherapy are presented.

CLRS 390. Research Methods in the Radiologic Sciences. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: STAT 210 and junior standing or permission of instructor. The fundamentals of the research process will be presented for analysis and discussion. Elements of research appropriate to the radiologic sciences will be reviewed. Emphasis will be on the ability to critically review research studies along with the selection and design of a research project.

CLRS 393. Clinical Education I. 2-5 Hours.

Semester course; 2-5 clinical hours. 2-5 credits (120 contact hours per credit). Prerequisites: CLRS 208 with a minimum grade of C; and CLRS 201, CLRS 300, CLRS 303 or CLRS 305 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

CLRS 394. Clinical Education II. 2-4 Hours.

Semester course; variable clinical hours (120 hours per credit). 2-4 credits. Prerequisite: CLRS 393 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

CLRS 395. Clinical Education III. 2-6 Hours.

Semester course; variable clinical hours (120 hours per credit). 2-6 credits. Prerequisite: CLRS 394 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine as well as advanced procedures.

CLRS 398. Introduction to Research. 1 Hour.

Semester course; 1 credit. Prerequisite: CLRS 390. Provides students the opportunity to explore and investigate a topic of special interest in their area of concentration under the supervision of a faculty adviser. Emphasizes the application of research concepts to writing a research project proposal.

CLRS 400. Contemporary Topics in Radiologic Sciences. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Enrollment restricted to clinical radiation sciences majors with junior standing or higher. Introduces issues and concepts relevant to the radiologic sciences such as leadership, professionalism, emerging technologies, and ethics and law. Applies advanced topical areas to both general radiologic sciences and individual professional concentrations.

CLRS 401. Pediatric Sonography. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 311. Enrollment restricted to clinical radiation science majors. Investigates anatomy, pathology, image production/interpretation and ultrasound scanning techniques/protocols specific to pediatric ultrasound imaging. Examines anatomical areas such as the pediatric bowel, spine, hips and head/brain.

CLRS 403. Advanced Patient Care for the Imaging Professional. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 208 with a minimum grade of C and junior standing or permission of instructor. Explores advanced patient care techniques and age-specific considerations in the radiation sciences. Emphasizes the application of advanced patient care principles.

CLRS 404. Ultrasound Pathology and Preliminary Writing. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 311 and CLRS 329. Enrollment restricted to clinical radiation science majors. Introduces case studies pertaining to the ultrasonic evaluation of small parts, abdominal organs, pelvic anatomy and obstetrics to increase and assesses the critical-thinking skills needed to proficiently write preliminary ultrasound reports.

CLRS 405. Principles of Mammography. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 201 and CLRS 320 with a minimum grade of C in both and senior standing or permission of instructor. Presentations and discussions designed to provide an overview of the principles of mammography. Topics include history, anatomy, physiology and pathology of the breast; exposure techniques; and quality control. Focuses on routine and specialized positioning of the breast and image evaluation to prepare students for practical experience in mammography.

CLRS 406. Introduction to MRI. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 341 with a minimum grade of C or permission of instructor. An introduction to the elements of magnetic resonance imaging, including instrumentation, physical principles, image production and quality, MR safety, magnetic resonance angiography and imaging applications.

CLRS 407. Introduction to PET/CT. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 408. Overview of PET and PET/CT focusing on instrumentation, radiopharmaceuticals and its diagnostic application in neurology, oncology and cardiology.

CLRS 408. Introduction to Computed Tomography (CT). 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 341 with a minimum grade of C or permission of instructor. Provides the student with an overview of computed tomography. Topics include computed tomography physical principles, data acquisition/image reconstruction, equipment and terminology. Patient care issues (i.e., preparation, monitoring) and basic quality control will be introduced.

CLRS 410. Routine Computed Tomography Procedures. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: CLRS 206 and 408, or permission of instructor. Presents routine procedures used in computed tomography imaging. Reviews examinations and protocols involving the head, chest, abdomen and extremities.

CLRS 412. Radiation Therapy Treatment Planning. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CLRS 323 and CLRS 342 with a minimum grade of C in both or permission of instructor. An introduction to routine 2-D and 3-D treatment planning for the most common forms of cancer including prostate, rectum, lung, breast, and head and neck regions. Simulated lab training using a treatment planning system will be included. Emphasis will be on the rationale and process of treatment planning for patients undergoing radiation therapy.

CLRS 415. Pathology and Treatment Principles II. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: CLRS 314 with a minimum grade of C. A continuation of CLRS 314. Presents the fundamentals of the disease process for the following cancers: gastrointestinal, lymphomas and hematological malignancies, bone tumors, childhood tumors, and eye and orbital tumors. Discusses patient workup and prognosis, treatment results, and the effects of combined therapies. Radiotherapeutic emergencies, palliation and combined modality treatment also will be discussed. Emphasis will be placed on traditional and advanced technology and its applications in treatment delivery in radiation oncology. Requires demonstration of competence in selected radiotherapeutic procedures, including positioning of simulated patients and the manipulation of equipment.

CLRS 416. Advanced Vascular Sonography. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CLRS 302 or permission of the department chair. Enrollment is restricted to clinical radiation sciences majors or by permission of the department chair. Introduces advanced anatomy, pathology and evaluation techniques of vascular anatomy, including arterial, intracranial cerebrovascular, dialysis grafts and visceral vascular anatomy. Presents processes for performing arterial, transcranial Doppler, dialysis mapping, and visceral vascular protocols and physiologic testing.

CLRS 417. Nuclear Medicine Procedures IV. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 319 with a minimum grade of C. Presents the techniques employed in the performance of advanced nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

CLRS 420. Introduction to Vascular-Interventional Radiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: departmental approval. Introduction to the basic techniques of vascular and interventional radiologic procedures with emphasis on the anatomy demonstrated, equipment, contrast agents, and the role and responsibilities of the technologist.

CLRS 421. Vascular-Interventional Radiology Procedures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 420. Enrollment restricted to clinical radiation science majors or by permission of department chair. Presents an overview of common vascular-interventional radiology procedures to include arteriography (abdominal, peripheral, pulmonary, cardiac and carotid/cerebral) as well as vascular and nonvascular interventions (filter placement, embolization, venous access and management of fluid collection, urinary disease and biliary disease). Emphasis is placed on instrumental, technique and imaging parameters.

CLRS 430. Radiobiology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 232 with a minimum grade of C and senior standing or permission of instructor. Presents the principles of biologic responses to radiation, including factors influencing radiation effects, tissue sensitivity and tolerance. Clinical application in radiography, nuclear medicine and radiation therapy are reviewed.

CLRS 450. Musculoskeletal Sonography. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CLRS 302 or permission of the department chair. Enrollment is restricted to clinical radiation sciences majors or by permission of the department chair. Introduces musculoskeletal anatomy, pathology, image production and interpretation, and scanning techniques/protocols related to musculoskeletal sonography to include, but not limited to, the following joints: shoulder, elbow, hand/wrist, hip, knee, ankle/foot.

CLRS 453. Quality Management in Nuclear Medicine. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 322 and CLRZ 322 with a minimum grade of C in both. Explores the quality assurance parameters in a nuclear medicine department. Emphasis is given to the performance of tests to assess survey meters, spectrometers, dose calibrators, gamma cameras and SPECT imaging systems. Additionally, quality assurance is discussed in terms of radiopharmaceuticals, radioimmunoassay laboratories and patient management.

CLRS 455. Quality Management in Radiation Therapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 323 and CLRS 342 with a minimum grade of C. Designed to provide the student with knowledge of the concepts and principles of quality assurance. The performance of various tests including purpose, sources of malfunction and action guidelines will be discussed.

CLRS 461. Radiopharmaceutical: Preparation and Quality Control. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 319, CLRS 322 and CLRZ 322, all with a minimum grade of C. Provides the technical knowledge necessary for the preparation and quality control of radiopharmaceutical agents for in-vivo and in-vitro nuclear medicine studies.

CLRS 471. Radiology Imaging Procedures for Radiologist Assistants I and II. 3 Hours.

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: CLRS 332, CLRS 403, CLRZ 403 and permission of instructor. Completion of CLRS 471 to enroll in CLRS 472. Establishes a framework for radiologist assistants' participation in patient examinations for diagnostic inspection and/or therapeutic treatment. Emphasizes establishment of fundamental radiology procedures that follow American College of Radiology Standards for principles and practices producing high-quality radiographic care. Includes basic radiology procedures in genitourinary, gastrointestinal, pediatric, thoracic, musculoskeletal selections and vascular/interventional specialties. Addresses legal, ethical and professional issues concerning radiologist assistants.

CLRS 472. Radiology Imaging Procedures for Radiologist Assistants I and II. 3 Hours.

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: CLRS 332, CLRS 403, CLRZ 403 and permission of instructor. Completion of CLRS 471 to enroll in CLRS 472. Establishes a framework for radiologist assistants' participation in patient examinations for diagnostic inspection and/or therapeutic treatment. Emphasizes establishment of fundamental radiology procedures that follow American College of Radiology Standards for principles and practices producing high-quality radiographic care. Includes basic radiology procedures in genitourinary, gastrointestinal, pediatric, thoracic, musculoskeletal selections and vascular/interventional specialties. Addresses legal, ethical and professional issues concerning radiologist assistants.

CLRS 475. Medical Imaging Fundamentals for Radiologist Assistants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 332, CLRS 403, CLRZ 403 and permission of instructor. Promotes an understanding of methods and techniques for the systematic observation of static and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies and pathological conditions. Includes protocols for drafting memoranda of initial observations based on image assessment.

CLRS 480. Applied Radiology Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: departmental approval. Relates basic concepts in management to the radiologic environment and explores the relationship between the radiologic facility and the health care system.

CLRS 481. Applied Pharmacology for Radiologic Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to clinical radiation science majors. Covers general pharmacology including the study of drug groups, dosages, administrations and reactions of drugs common to patients. Special emphasis on contrast media and other agents commonly used in medical imaging and therapy.

CLRS 488. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in department. Designed to allow students to integrate the various individual courses into a single perspective as it relates to the radiation sciences. Addresses timely professional issues, including the need for lifelong learning and participation in professional organizations, as well as preparing for certification and future employment.

CLRS 492. Directed Study: Radiologic Sciences. 1-4 Hours.

Semester course; 1-4 independent study hours. 1-4 credits. A maximum of 6 credits can apply toward graduation requirements. Enrollment restricted to clinical radiation science majors. Provides the opportunity for individualized research projects, tutorial studies, special clinical work or other topics not available in formal course work.

CLRS 493. Clinical Education IV. 1-5 Hours.

Semester course; variable clinical hours (120 hours per credit). 1-5 credits. Prerequisite: CLRS 395 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and advanced procedures.

CLRS 494. Clinical Education V. 1-5 Hours.

Semester course; variable clinical hours (120 hours per credit). 1-5 credits. Prerequisite: CLRS 493 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and advanced procedures.

CLRS 498. Senior Project. 2 Hours.

Semester course; 2 seminar hours. 2 credits. Prerequisites: CLRS 390, CLRS 398 and senior standing in department. Emphasizes the application of research concepts in the design, implementation and presentation of a project under the supervision of a faculty adviser. Students investigate a topic of interest in their area of concentration.

Clinical Radiation Sciences Lab (CLRZ)**CLRZ 201. Radiographic Imaging and Exposure I Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: CLRS 205. Pre- or corequisite: CLRS 201. Designed to introduce students to the fundamentals of radiographic image production. Requires performance of laboratory exercises to become familiar with equipment operation and manipulate radiation exposure variables to produce quality images.

CLRZ 321. Nuclear Medicine Physics and Instrumentation Laboratory I. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: CLRS 303. Corequisite: CLRS 321. Presentation of the applications and techniques employed in the operation of nuclear medicine non-imaging devices. Labs will emphasize the use of survey meters, dose calibrator and scintillation counting device.

CLRZ 322. Nuclear Medicine Physics and Instrumentation Laboratory II. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 321 and CLRZ 321 with a minimum grade of C in both. Corequisite: CLRS 322. Evaluation of applications of different imaging techniques and computer processing utilized in nuclear medicine. Emphasizes the use of single and multiple channel analyzers, planar and SPECT acquisition, and image processing.

CLRZ 403. Advanced Patient Care for the Imaging Professional. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: CLRS 208 or permission of instructor. Pre- or corequisite: CLRS 403. This course provides simulated experience in performing advanced patient care techniques related to the radiation sciences. Topics include cardiac rhythm interpretation, advanced cardiac life support, urinary catheterization, tracheostomy care, basic laboratory skills, basic respiratory therapy skills, pulse oximetry, IV therapy and pharmacology, and conscious sedation.

CLRZ 405. Principles of Mammography Lab. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 201 and CLRS 320, or permission of instructor. Pre- or corequisite: CLRS 405. Provides simulated experience in performing positioning of the breast. Students will be expected to demonstrate competence in positioning the breast phantom for a variety of routine and specialized projections. In addition, quality control procedures specific to mammography will be performed.

CLRZ 461. Radiopharmacy Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 319, CLRS 322 and CLRZ 322, all with a minimum grade of C. A simulated radiopharmacy laboratory will focus on operation of laboratory equipment in the compounding of radiopharmaceuticals.

Gerontology (GRTY)**GRTY 200. Disrupting Ageism: An Exploration of Diversity and Aging. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an exploration of issues related to social roles, power, intersectionality and how they impact aging -- with an emphasis on gender and sexual minorities. Also focuses on aging within communities of privilege, as well as barriers and opportunities for positive aging among diverse populations.

GRTY 410. Introduction to Gerontology. 3 Hours.

3 credits. A survey of the field of aging with attention to physical, psychological, social, economic and cultural ramifications of age.

Health Care Management (HCMG)**HCMG 300. Health Care Organization and Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the structure and function of the U.S. health services delivery system. Examines the role and responsibilities of health care professions and occupations, technology and financing arrangements in the delivery system.

Patient Counseling (PATC)**PATC 410. Basic Patient Counseling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an intensive course of study toward the development of pastoral skills in the hospital context. Assigns students to selected clinical areas with faculty supervision. Utilizes group process and individual supervision for the review of clinical material.

Rehabilitation Counseling (RHAB)**RHAB 201. Introduction to Rehabilitation Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course has been designed to expose the student to the history and development of the rehabilitation movement. Topics explored include basic concepts and philosophies of rehabilitation, psychological and vocational adjustments of the disabled, and an examination of selected rehabilitation methods.

RHAB 202. General Substance Abuse Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to help the student develop an appreciation of society's attitude about the use of drugs and alcohol, and each individual's responsibility in decisions about the use of drugs. Discussion is offered on specific characteristics of drugs, how addiction occurs and role of rehabilitation after addiction.

RHAB 321. Introduction to Substance Abuse. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RHAB 202. Introduction to substance abuse as a progressive family disease with consideration of basic contributing factors (physiological, psychological and sociocultural builds on foundation established in RHAB 202); exposure to multidisciplinary rehabilitative approaches to arresting the disease, as well as some knowledge of intervention; brief mention of the highlights of the continuum of care available in the recovery process.

RHAB 452. Crisis Intervention with the Substance Abuser. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RHAB 321, RHAB 322 and RHAB 523, or permission of instructor. Focus on the application of concepts discussed in theory in the recovery process course; sharing of difficulties and successes with crisis intervention by individuals already in the field; provision of new and more refined techniques under the direction of experts demonstrating their applicability.

RHAB 495. Practicum in Rehabilitation. 6,9 Hours.

Semester course; 3 credits. Prerequisite: permission of instructor. Designed to provide opportunities for observation and participation in rehabilitation and related settings. Experiences are systematically related to theoretical concepts.

College of Humanities and Sciences

African American Studies (AFAM)

AFAM 104. Sociology of Racism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation and as a form of human conflict. The central focus of interest will be on black-white relationships. Crosslisted as: SOCY 104.

AFAM 105. Survey of African History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: HIST 105.

AFAM 106. Survey of African History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: HIST 106.

AFAM 111. Introduction to Africana Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Using a multidisciplinary approach, this course will familiarize students with important events developments, personalities and other phenomena that help facilitate the study and understanding of peoples of African descent dispersed throughout the world from their early continental African past to their present existence.

AFAM 121. Tap Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: DANC 121.

AFAM 122. Tap Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: DANC 122.

AFAM 126. African-Caribbean Dance I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: DANC 126.

AFAM 127. African-Caribbean Dance I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: DANC 127.

AFAM 151. Jazz Dance Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: DANC 151.

AFAM 152. Jazz Dance Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: DANC 152.

AFAM 200. Introduction to African Societies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: ANTH 200/INTL 200.

AFAM 201. Theories and Foundations of Africana Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the origins of African American studies in the civil rights and Black Power movements. Examines critical issues and perspectives in the discipline from its inception to the present day. Possible topics include black nationalism, neo-colonialism, Kwaito theory, black women's studies, Afrocentrism, Egyptology, black queer studies, critical race theory, diaspora theory and community engagement.

AFAM 204. Africa in Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM/ANTH/INTL 200 or permission of instructor. The impact of modern social change upon the traditional aspects of African life. Various aspects of social change as it applies to Africa today will be explored.

AFAM 211. Africana Social and Political Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Guides students in identifying and mapping the continuities and discontinuities in political and social thought of the African world. Through an exploration of the various works of scholars, activists and artists, this course will expose students to nondominant narratives in an effort to expand the breadth and depth of interdependence in Africana contributions to ideas such as, but not limited to, the arts, justice, equality and human emancipation.

AFAM 291. Topics in African American Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits. A study of specialized areas of African American studies.

AFAM 302. Politics of the Civil Rights Movement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. It has special focus on the events of the 1960s and particularly their implication for the current state of U.S. Civil Rights. Crosslisted as: POLI 302.

AFAM 303. Black Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black theatre dramaturgy. Crosslisted as: THEA 303.

AFAM 305. African American Family in Social Context. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: GSWS 305/SOCY 305.

AFAM 307. Black Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: RELS 307/INTL 307.

AFAM 309. Gender and Global Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how health policies produce and regulate gendered bodies and sexualities. Topics may include how colonial medicine and health policies of detection, diagnosis, surveillance, quarantine and confinement were implemented as methods of social control. Analyzes continuities between colonial medicine and more contemporary interventions that in the name of individual and communal health attempt to shape proper sexualities and gendering. Crosslisted as: ANTH 309/INTL 309/GSWS 309.

AFAM 310. Black Health Matters: Social Determinants of Health in the African American Community. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines health inequalities and health inequities in the U.S. Explores the primary health concerns and issues relating to the African American community. Focuses on social determinants of infant mortality, cardiovascular disease, AIDS, violence and cancer, as well as the impact these determinants have on the overall health status of African Americans.

AFAM 311. African Diaspora Experiences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Traces the geography and history of dispersed African peoples from their motherland to all parts of the world and reveals the cultural, social, political and economic developments of peoples of African descent worldwide. Surveys the evolution and implication of the trans-Atlantic, trans-Saharan, and trans-Indian Ocean slave trade, in particular the dimensions of experiences of African-descended peoples with emphasis not only on North and South America but also the Caribbean, Europe, Asia, Papua New Guinea and Australia.

AFAM 318. Politics of Race, Class and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: POLI 318/GSWS 318.

AFAM 322. Personality and Behavior of the African American. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors such as motivation, ego-functioning and the socialization processes, with special emphasis on living conditions of African-Americans. Crosslisted as: PSYC 322.

AFAM 330. Black Sights and Sites: Visual Media and Race. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An exploration of the politics of representing race in U.S. visual media within broader economic, political and cultural contexts. Possible areas of focus include fashion, TV/film, music, new media, visual art and sports.

AFAM 333. Geography of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: URSP 333/INTL 333.

AFAM 338. Ferguson, USA: The Criminalization of Race in Historical Perspective. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Examines African American encounters with the criminal justice system from the era of emancipation to the present day. Possible topics include constructions of race; the science of criminality; extra-legal violence; the civil rights movement and black power; prison politics; mass incarceration; the school-to-prison pipeline; Black Lives Matter.

AFAM 342. African-American Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the art forms produced by Americans of African origin from the 17th century to the present with an emphasis on contemporary trends in black art. Crosslisted as: ARTH 342.

AFAM 343. Black Political Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present. Crosslisted as: POLI 343.

AFAM 345. African-American Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. In this course, students will discuss and analyze the dynamics of the black experience in the American political system. The status of African-Americans in the United States and the struggle for racial equality will be examined, as will the manner in which American institutions have responded to these phenomena. Students will examine the race/class metric in African-American politics, particularly policies of Affirmative Action as a black progress strategy. Crosslisted as: POLI 345.

AFAM 346. Mental Health Across the African Diaspora. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Surveys theory and research on the interaction of culture and mental illness focusing primarily on populations of African descent in a seminar format. Topics to be addressed, through the lens of the Africana world, include epidemiological and ethnographic research on major psychiatric disorders, culture-bound syndromes and idioms of distress, mental health of immigrants and refugees, and cross-cultural competence in clinical practice.

AFAM 347. African American Children and Families. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Reviews cultural variations in the physical, cognitive, emotional and social development of African American children. Addresses historical and contemporary frameworks of child development and highlights the strengths and limitations of extant research paradigms in the study of African American children. Considers integrity-based approaches that explain the developmental competencies of African American children in response to environmental risks that exceed normative expectations.

AFAM 350. Studies in the Music of the African Continent and Diaspora. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: MHIS 350/INTL 370.

AFAM 356. Government and Politics of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism, and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: POLI 356/INTL 356.

AFAM 357. Politics of Southern Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: POLI 357/INTL 357.

AFAM 358. African Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art. Crosslisted as: ARTH 358.

AFAM 361. Americans from Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: HIST 361.

AFAM 362. Americans from Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: HIST 362.

AFAM 363. African Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of regional and/or cultural traditions of African literature with special attention paid to socio-political perspectives. Crosslisted as: ENGL 363/INTL 366.

AFAM 365. Caribbean Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: ENGL 365/INTL 367.

AFAM 379. African-American Literature: Beginnings Through the Harlem Renaissance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of the culture and literature of African Americans from their roots in Africa and the African Diaspora to the Harlem Renaissance. Authors may include Wheatley, Douglass, DuBois, Hurston, Hughes and Cullen. Crosslisted as: ENGL 379.

AFAM 382. African-American Literature: Realism to the Present. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of the culture and literature of African-Americans from the Harlem Renaissance to the present day. Authors may include Wright, Ellison, Hayden, Brooks, Walker and Morrison. Crosslisted as: ENGL 382.

AFAM 387. History of West Africa to 1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to 1800, with emphasis on the rise of states and empires, the introduction, spread and impact of Islam, the Atlantic slave trade and its effects, and colonialism. Crosslisted as: HIST 381.

AFAM 389. History of Southern Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa. Crosslisted as: HIST 383.

AFAM 390. Forced and Coerced Labor in Africa and the Americas. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines a broad range of forced and coerced labor in Africa and selected parts of the Americas, including the United States, Canada and the Caribbean, from around the 17th century to the 20th century. The role that gender and race played in slavery and coerced labor will be given particular attention. Crosslisted as: GSWS 390/HIST 380.

AFAM 391. Topics in African American Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits. A focused study of specialized areas of African American studies.

AFAM 392. Caribbean History to 1838. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late 15th century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition. Crosslisted as: HIST 376.

AFAM 393. Akhenaten to Cleopatra. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten and various aspects of Egyptian daily life.

AFAM 394. Service-learning in African American Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 310. Open to African-American studies majors only. Provides an overview of critical public health issues and intervention strategies that may influence life chances and disease susceptibility among African-Americans through a service-learning format.

AFAM 399. Interdisciplinary Research Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the interdisciplinary processes whereby those working in the field develop their arguments and interpretations concerning the black experience. Students will develop increased skills in library research and an awareness of the importance of such methodologies as archaeology, oral history, case studies, participant observations, experiments and surveys. Students will be introduced to the need for critical analysis, the role of biases and frames of references and the reason why scholars working in the field often reach different conclusions with reference to issues of fact, interpretation and significance.

AFAM 411. Applied Concepts in Africana Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 111 with a minimum grade of C. Pre- or corequisite: AFAM 399. Explores the processes and challenges involved in studying the experiences of African-descended peoples, with a focus on the development of an idea or observation into a finished and well-executed research product. Investigates how these processes unfold in the works of specific black studies researchers, as they capture the varied consciousnesses, histories and social forces surrounding black life in America, Africa and throughout the diaspora.

AFAM 416. The Origin and Evolution of the Idea of Race. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the 20th century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon. Crosslisted as: ANTH 416.

AFAM 420. Women of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. This course looks at the traditional roles of women in African societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: ANTH 420/INTL 420.

AFAM 440. Modern and Contemporary Art and Architecture of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. A study of the impact on African art and architecture of Colonialism, urbanization and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists. Crosslisted as: ARTH 440.

AFAM 451. Religion, Racism and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WRLD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: INTL 451/RELS 451.

AFAM 491. Topics in African-American Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 9 credits; 3 credits may be applied to the African-American studies minor. An in-depth study of specialized areas of African-American studies.

AFAM 492. Independent Study. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum 4 credits per semester. Maximum total of 4 credits in all independent study courses. Prerequisites: completion of 12 credits in African-American studies courses; junior or senior standing.

AFAM 493. Internship in Africana Studies. 3 Hours.

Semester course; 3 field experience hours. 3 credits (minimum of 50 work hours per credit). Prerequisites: AFAM 201, AFAM 211 and AFAM 311. Enrollment is restricted to African American studies majors of junior or senior standing; permission from the department chair or internship coordinator is also required. Students will be placed in internships that provide real-life experience working with populations of African descent with the goal of defining, improving, affirming and/or validating black experiences in the African diaspora. Graded as pass/fail.

AFAM 494. Internship in African American Health. 3 Hours.

Semester course; 150 clock hours in appropriate organization. 3 credits. Prerequisites: AFAM 310, either AFAM/ANTH/INTL/WMNS/GSWs 309 or AFAM/PSYC 322, and AFAM 394. Applicants must be approved by the internship coordinator. Open to African-American studies majors of senior standing only. Students are placed in organizations that offer supervised work or research experience in a health setting appropriate to their interests. A final report must be submitted upon completion of the internship.

AFAM 499. Capstone Seminar in Africana Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: AFAM 111, AFAM 211, AFAM 311 and AFAM 399. Enrollment is restricted to African American studies majors of senior standing. Involves the planning and execution of a research project grounded in the methodology of African American studies.

American Studies (AMST)**AMST 195. Richmond. 1 Hour.**

15 contact hours. 1 credit. A series of mini-courses dealing with aspects of Richmond's literary and historical importance from the city's beginning to the present.

AMST 391. Topics in American Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Selected issues or problems in American civilization with materials drawn from such areas as history, the social sciences, philosophy, literature, the arts and mass communications.

AMST 394. Perspectives in American Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 6 credits in American-related courses. An introduction to the methods, significant works and major trends in American studies. May be taken for American literature credit by English majors. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

Anthropology (ANTH)**ANTH 103. Introduction to Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from global cultures, and on the four fields of anthropology.

ANTH 105. Introduction to Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of archaeological sites, methods and theories from around the world, from the earliest human cultures, to the rise and spread of civilizations, to the modern era. Crosslisted as: INTL 104.

ANTH 200. Introduction to African Societies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: AFAM 200/INTL 200.

ANTH 210. Biological Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of biological anthropology. Emphasis on the history and study of humans as biological organisms. Topics include genetic, social and ecological determinants of variation in human growth and biological diversity, as well as human adaptation and adaptability, disease, diet, and nutrition.

ANTH 220. Cultural Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of social and cultural anthropology. Provides an overview of key themes and theories in the subject, as well as the analytical and methodological tools to critically consider cultural difference, social organization and social change, with reference to a representative range of culture areas and the empirical fields studied by cultural anthropologists.

ANTH 230. Anthropological Linguistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of anthropological linguistics. Emphasis is on the interactions between language and culture from a comparative perspective, as well as the relationship between language and social identities and relationships. Also an introduction to the field's methodology, research techniques, analytical tools and their applications.

ANTH 301. Human Evolution. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. Introduces the range of human diversity as well as a broad understanding of evolution and evolutionary biology, particularly as it applies to hominid evolution. Specific topics include basic genetics, primatology, paleontology and the hominin fossil record. Crosslisted as: BIOL 341.

ANTH 302. Archaeological Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 105/INTL 104 and UNIV 200 or HONR 200 with a minimum grade of C. Covers the basic theoretical perspectives and tools of archaeology, including analysis and interpretation of archaeological materials. Students will review the intellectual history of archaeology, applying a variety of theoretical approaches to archaeological data sets and sites.

ANTH 303. Archaeological Methods and Research Design. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: ANTH 105/INTL 104 and UNIV 200 or HONR 200 with a minimum grade of C. Introduces the basic practices of archaeology, including planning, excavation, artifact analysis, documentary research, mapping, dating sites and artifacts, and interpretation and presentation of findings. Students will participate in an active field research program and will apply methods at an active site and lab.

ANTH 304. Sociology of Families. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: SOCY 304/GSW 304.

ANTH 307. Human Osteology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210. Corequisite: ANTZ 307. Emphasizes human skeletal development and the identification of specific bones and their anatomical landmarks, including the determination of side for paired bones. Also discussed are methods of estimating age, sex and stature from human skeletal remains and application of human skeletal data to broader anthropological questions.

ANTH 309. Gender and Global Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how health policies produce and regulate gendered bodies and sexualities. Topics may include how colonial medicine and health policies of detection, diagnosis, surveillance, quarantine and confinement were implemented as methods of social control. Analyzes continuities between colonial medicine and more contemporary interventions that in the name of individual and communal health attempt to shape proper sexualities and gendering. Crosslisted as: AFAM 309/INTL 309/GSW 309.

ANTH 310. Forensic Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210 or FRSC 300 with a minimum grade of C. A comprehensive overview of forensic anthropology including its development and the theory and methodology on which it is based. Crosslisted as: FRSC 310.

ANTH 312. History of Human Settlement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A cultural and historical geography of human migration and settlement over the earth. Topics may include agricultural and urban systems, exploration, colonization and imperialism, and changing relationships with the environment, during and since the Middle Ages. Crosslisted as: URSP 312.

ANTH 315. Field Methods and Research Design in Cultural Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103, and ANTH 220 or ANTH 230. Overview of quantitative and qualitative anthropological field techniques as well as the ethical dimension of anthropological fieldwork. Basics of research design, effective methodology and writing grant proposals.

ANTH 321. Gender and Culture in Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 103 and AFAM/ANTH/INTL 200; or AFAM 111. Promotes an understanding of certain issues and conditions of women and their developing positions and statuses on the African continent. Among the topics to be considered are health and reproductive issues, women as political agents (*vis-à-vis* men), human rights debates, environmental practices, customary and traditional rites versus modernization, law and justice, and the concept of African feminism.

ANTH 328. Language, Culture and Cognition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: FRLG 328/ENGL 392/LING 392.

ANTH 330. Language and Prehistory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 230, ANTH/ENGL/LING 390 or ANTH/ENGL 392. Considers the basic principles of diachronic linguistics in terms of the questions that historical linguists ask and the kinds of data they have at their disposal to answer them. Discusses uses of linguistic data in the reconstruction of prehistory in different parts of the world, analyzing strengths and weaknesses of such data and suggesting ways in which it can be usefully combined with data from other disciplines.

ANTH 331. Public Culture: Anthropology Through Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; WRLD 230. Explores how anthropology can contribute to a critical analysis of films as cultural representations. Class discussion will relate particular films both to the cultural context they depict and to the cultural context in which they were produced. Will also examine films as images that produce cultural meanings with the potential to affect the viewer's understanding of the world and comprehension of self.

ANTH 348. South American Ethnography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. General ethnographic survey of both highland and lowland indigenous cultures of South America and cultural changes as a result of European contact. Crosslisted as: INTL 348.

ANTH 349. Rethinking a Continent: Latin America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. This course surveys contemporary cultures of Latin America. It addresses historical sociocultural developments from an anthropological perspective and introduces concepts from social justice studies, development anthropology and applied anthropology. Crosslisted as: INTL 349.

ANTH 350. Rethinking a Continent: Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of historical sociocultural developments from an anthropological perspective with an emphasis on integrative and disintegrative forces that have shaped cultures and identities in Europe. Introduces concepts from sociocultural anthropology, social justice studies and applied anthropology. Crosslisted as: INTL 350.

ANTH 355. Death and Burial. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Explores beliefs about the dead across time and space, the transformations physical bodies undergo after death and how archaeologists investigate human remains to interpret the beliefs and social practices of past cultures.

ANTH 364. Mythology and Folklore. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of one or more forms of folklore, such as folktales, fairy tales, legends, myths, proverbs, riddles, ballads and/or games, with some attention to literary, social or historical significance and contexts. This course may also include approaches to collecting material or to examining later literary forms and texts inspired by folklore. Crosslisted as: ENGL 364.

ANTH 370. Visualizing and Exhibiting Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Addresses the ability to visualize the knowledge gathered by anthropologists through forms of technology such as three-dimensional artifact scanning and 3D printing. Students will use the hundreds of objects scanned by archaeologists and ethnographers across the globe, including in VCU's Virtual Curation Laboratory, to design dynamic hands-on and virtual exhibits and activities that communicate multiple perspectives on the human condition and that are designed to stimulate and provoke multiple reactions and encourage discussion.

ANTH 375. Field Archaeology. 6 Hours.

Semester course; 3 lecture and 8 field and laboratory hours. 6 credits. Introduction to archaeological field and basic laboratory techniques. Archaeological data collection (excavation or survey) forms the core of the course.

ANTH 380. Medical Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210 or 220. An introduction to the biological and cultural anthropological study of global health and well-being, including healing processes, the biosocial relations of healing management and relationships between biomedicine and pluralistic medical systems.

ANTH 381. Modern Identities: Nation Building. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Critically explores how nation building and national identities have developed over the past two centuries among peoples across the globe. Class discussions will examine theoretical perceptions of these processes and focus on how they shaped and shape realities in different times and places. Crosslisted as: INTL 381.

ANTH 383. Evolutionary Medicine and Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210, BIOL 101 or BIOL 151. Explores how modern human health and disease have been shaped by evolutionary processes. Particular emphasis is placed on examining health-related traits that are adaptive in one context but maladaptive in others, and why attempts to eliminate some of these traits can have deleterious effects on other aspects of our health. Specific diseases to be addressed include hypertension, diabetes, clinical depression, reproductive disorders, gastrointestinal disorders and drug addiction, among many others.

ANTH 387. Environmental Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Provides an introduction to the kinds of environmental evidence archaeologists access and the kinds of questions they investigate using that evidence. Explores a variety of ways in which archaeologists examine the relationship between humans and the environment and the sorts of effects that different environmental conditions and changes have had on ancient societies.

ANTH 388. African Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Surveys the range of archaeological knowledge currently available about the African continent, highlighting the major interrelated social, economic/technological and cultural transformations in the African past and the most important archaeological sites and discoveries there. Addresses themes of Africa's enduring connections with the rest of the world, unique patterns of social and cultural development found on the continent, relations between African societies and their environments, and the contemporary significance of the continent's cultural heritage.

ANTH 389. World Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Examines the diversity and evolution of human cultures through archaeological practices and techniques.

ANTH 390. Introduction to Linguistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. Crosslisted as: ENGL 390/LING 390.

ANTH 391. Topics in Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum 6 credits per semester; maximum total of 18 credits in departmental topics courses that may be applied to the major. Prerequisite: ANTH/INTL 103. Seminar on current specialized areas of anthropological interest. See the Schedule of Classes for specific topics to be offered each semester.

ANTH 394. Historical Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 or ANTH 105/INTL 104, and any history course. A review of historical archaeology, recognizing its contemporary emphasis on the spread of European cultures across the globe beginning in the 15th century. Methods and findings of archaeological research from the United States, Europe and Africa will be covered with special emphasis on the study of documents and artifacts related to the emergence and present state of the modern world. Students will participate in field research. Crosslisted as: HIST 390.

ANTH 398. Field Investigations in Anthropology. 1-8 Hours.

Semester course; variable hours. 1-8 credits. May be repeated for a maximum of 8 credits. Permission of instructor required. A course involving travel and/or study in an off-campus context. Intended primarily for students participating in directed study abroad programs, the course meets the experiential learning requirement for the anthropology major.

ANTH 399. Junior Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: ANTH 210, 220 or 230; and junior standing. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation, and lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the anthropology program.

ANTH 403. Primatology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210 or ANTH 301/BIOL 341. Primatology investigates the taxonomic relationships among primates through comparative anatomy, comparative behavior and comparative biochemistry. Study of primate evolution, demography, subsistence, reproduction, social organization, communication systems and ecology. Crosslisted as: BIOL 403.

ANTH 415. Economic Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies. Crosslisted as: INTL 415.

ANTH 416. The Origin and Evolution of the Idea of Race. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the 20th century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon. Crosslisted as: AFAM 416.

ANTH 420. Women of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. This course looks at the traditional roles of women in African societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: AFAM 420/INTL 420.

ANTH 425. Religion, Magic and Witchcraft. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: RELS 425/INTL 425.

ANTH 450. Cross-cultural Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: ENGL 454/INTL 454.

ANTH 454. Theory in Cultural Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 220 or ANTH 230, and at least one 3-credit 300-level ANTH course. A study of the connections between theoretical work that addresses understandings of culture and methodological practice centered on creating ethnography.

ANTH 455. Anthropology of Development and Globalization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL 101. May be taken for a maximum of nine credit hours in three different world areas. Consists of a global study of the developing Third World with particular emphasis on rural populations, subsistence farmers, indigenous groups and small entrepreneurs. Focuses on development and globalization while providing insights into the peasantry as a class, women in peasant societies, changes in peasant societies and the peasantry as a player in the policies of the modern state. Crosslisted as: INTL 455.

ANTH 457. Comparative Perspectives on Cultures and Societies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; UNIV 200 or HONR 200. Examination of the theoretical, methodological and ethical problems that arise from anthropological comparisons of cultures. Crosslisted as: INTL 457.

ANTH 469. Human Dentition: ID and Anthropology. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites: ANTH 103 and ANTH 210; or ANTH 301; or BIOL 318. Focuses on the evolutionary anthropology of human dentition. Topics include evolution, genetics and ontogeny of the dentition; functional aspects of tooth size and shape; dental asymmetry; dental morphology and population affinities; dental pathology and subsistence; and dental markers of physiological stress. Students will explore within- and between-group variation, as well as the relationship between dental size and shape and behavior, relatedness and nutrition.

ANTH 490. Anthropology Senior Capstone. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: completion of 15 credits in anthropology at the 300 and 400 level or the equivalent; senior standing. Open only to anthropology majors. Explores current research that transects more than one subfield of anthropology. Research foci will be at the discretion of the instructor, but students will explore how the anthropological subfields influence and speak to each other in new translational research, and will assess the emerging literature and scientific questions with a critical and scientific perspective.

ANTH 491. Advanced Topics in Anthropology. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Maximum 6 credits per semester with different topics. Prerequisites: ANTH/INTL 103; ANTH 210, 220, or 230; and UNIV 200 or HONR 200. Seminar on current specialized areas of anthropological interest. See the Schedule of Classes for specific topics to be offered each semester. A maximum total of 18 credits in departmental topics courses (including ANTH 391 and 491) may be applied to the major.

ANTH 492. Independent Study. 1-6 Hours.

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study and internship courses. Prerequisites: determination of the amount of credit and permission of the instructor and the group coordinator must be procured prior to enrollment in the course; a minimum GPA of 3.0 in the major. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the anthropology program.

ANTH 493. Anthropology Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits for majors and 3 credits for minors. Prerequisites: completion of 9 credits in anthropology courses at the 300 level or above, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in a local, national or international business or agency offering opportunities in anthropological field methods or research.

ANTH 497. Honors in Anthropology. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. ANTH 497 is a prerequisite for ANTH 498. Design and completion of a long-term research project in the major. The thesis project is the culmination of an advanced course of study within the anthropology program. Under the supervision of a faculty mentor, students must demonstrate a thorough understanding and use of anthropological research techniques and analysis, a knowledge of relevant literature, and sophisticated writing and research abilities. Students must apply to program for participation in honors thesis work. See Bulletin for eligibility criteria and application procedure.

ANTH 498. Honors in Anthropology. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. ANTH 497 is a prerequisite for ANTH 498. Design and completion of a long-term research project in the major. The thesis project is the culmination of an advanced course of study within the anthropology program. Under the supervision of a faculty mentor, students must demonstrate a thorough understanding and use of anthropological research techniques and analysis, a knowledge of relevant literature, and sophisticated writing and research abilities. Students must apply to program for participation in honors thesis work. See Bulletin for eligibility criteria and application procedure.

Anthropology Lab (ANTZ)**ANTZ 301. Human Evolution Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: BIOL 341/ANTH 301. Laboratory exercises correlated with BIOL 341/ANTH 301. Exercises emphasize comparative primate and fossil anatomy, morphology and behavior, as well as practice in recognizing and applying evolutionary principles in human evolution. Crosslisted as: BIOZ 341.

ANTZ 303. Archaeological Methods and Research Design Lab. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 303. Laboratory exercises correlated with ANTH 303. Exercises emphasize practical applications of describing, cataloging and analyzing artifacts and faunal and floral remains from archaeological excavations.

ANTZ 307. Human Osteology Lab. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 307. Laboratory exercises correlated with ANTH 307. Exercises will emphasize practical description and identification of human bones and bony morphology, as well as associated soft tissue structures.

ANTZ 403. Primatology Lab. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 403/BIOL 403. Laboratory exercises correlated with ANTH 403/BIOL 403. Exercises will emphasize comparative studies of morphology, behavior and social systems between and among primate groups, as well as the evolution of these characteristics in extant species and populations.

Arabic (ARBC)**ARBC 101. Beginning Arabic I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Arabic to take the placement test to determine eligibility. For students with no prior knowledge of Arabic. Beginning grammar, reading, writing and oral skills.

ARBC 102. Beginning Arabic II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

ARBC 201. Intermediate Arabic I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Arabic. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

ARBC 202. Intermediate Arabic II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Arabic. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

ARBC 205. Intermediate Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 201. Designed to increase student proficiency in the spoken language through audio-oral exercises, dialogues and conversation.

ARBC 301. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 202, ARBC 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Arabic. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

ARBC 391. Topics in Arabic: _____. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Prerequisite: ARBC 202 or equivalent. May be repeated with different topics for a maximum of 9 credits. Conducted in Arabic. An in-depth study of selected topics in Arabic. See the Schedule of Classes for specific topics to be offered each semester.

Biology (BIOL)**BIOL 101. Biological Concepts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A topical approach to basic biological principles. Topics include molecular aspects of cells, bioenergetics, photosynthesis, cellular respiration, cellular and organismal reproduction, genetics and evolution, and ecology. Not applicable for credit toward the major in biology.

BIOL 103. Global Environmental Biology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours (delivered mostly online). 4 credits. Online presentations, assignments, debates and exams require students to understand situations and ideas that involve scientific, social and economic concepts associated with Earth's environment. Laboratory exercises reinforce major course concepts. Integrates aspects of biology, chemistry, geology, physics and sociology. Topics include ecology, evolution, natural resources, air and water resources, energy and recycling, population biology, and sustainable global societies. Not applicable as a prerequisite for any biology course at the 200 level or above, nor for credit toward the B.S. in Biology.

BIOL 151. Introduction to Biological Sciences I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 141, MATH 151, MATH 200, MATH 201 or a satisfactory score on the math placement exam; and CHEM 100 with a minimum grade of B, CHEM 101 with a minimum grade of C or a satisfactory score on the chemistry placement exam. Introduction to core biological concepts including cell structure, cellular metabolism, cell division, DNA replication, gene expression and genetics. Designed for biology majors.

BIOL 152. Introduction to Biological Sciences II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and CHEM 101, both with a minimum grade of C. Focuses on evolutionary principles, the role of natural selection in the evolution of life forms, taxonomy and phylogenies, biological diversity in the context of form and function of organisms, and basic principles of ecology. Designed for biology majors.

BIOL 200. Quantitative Biology. 3 Hours.

Semester course; 3 lecture hours (delivered online or hybrid). 3 credits. Prerequisites: BIOL 151 and BIOZ 151 with minimum grades of C; and MATH 151, MATH 200, MATH 201, STAT 210 or satisfactory score on the VCU Mathematics Placement Test within a one-year period immediately preceding the beginning of the course. Enrollment is restricted to biology majors and biology minors. An introduction to the application of the scientific method, experimental design and quantitative aspects of biology.

BIOL 201. Human Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 101, 151, or 152, or BIOL/ENVS 103. Fundamentals of human biology, including the structure, function and disorders of human body systems, principles of human genetics and inheritance, human evolution, and the interaction of humans with the environment. Not applicable for credit toward the B.S. in Biology.

BIOL 205. Basic Human Anatomy. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours (plus online component). 4 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. Enrollment is restricted to students majoring in communication arts, health and physical education, health, physical education and exercise science; pre-health majors in clinical laboratory sciences, clinical radiation sciences, dental hygiene and nursing; students enrolled in the health sciences certificate program; and students in the advising tracks for pre-occupational therapy, pre-physician assistant, pre-pharmacy and pre-physical therapy. Additionally, students in the pre-dentistry and pre-nursing accelerated advising tracks must speak with a pre-professional health adviser prior to enrolling in the class. Human specimens, models and interactive software are used to study human body structures; emphasis is on the skeleto-muscular aspects. Not applicable for credit toward the B.S. in Biology.

BIOL 209. Medical Microbiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. General principles of microbiology and immunology to provide a thorough understanding of the host-microbe relationship in disease. Not applicable for credit toward the B.S. in Biology.

BIOL 217. Principles of Nutrition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 101, 151 or 152 with a minimum grade of C, or BIOL/ENVS 103 with a minimum grade of C. An introduction to basic principles of nutrition and their application in promoting growth and maintaining health throughout the life cycle. Not applicable for credit toward the B.S. in Biology.

BIOL 284. Laboratory Assistant Experience. 0 Hours.

Semester course; 0 hours. 0 credits. Enrollment is restricted to students with permission of the departmental chair and limited to students for whom a laboratory supervisor has agreed to mentor their laboratory assistantship. Helps facilitate student involvement in research laboratories within the Department of Biology. Students will assist with components of the laboratory's operation and gain experience working in a laboratory setting. Students will gain hands-on experience in performing tasks related to specific research areas based on the laboratory in which they are accepted to work. Graded as pass/fail.

BIOL 291. Topics in Biology. 1-4 Hours.

Semester course; variable hours. Variable credit. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

BIOL 300. Cellular and Molecular Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152; BIOZ 151 or LFSC/BNFO 251; BIOZ 152 or LFSC/BNFO 252; CHEM 101 and CHEZ 101, all with a minimum grade of C; BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212 or STAT 314. Biology majors must have completed BIOL 200. Pre- or corequisites: CHEM 102 and CHEZ 102. A study of the molecular biology of the cell as it relates to gene expression, cell signaling, and cell growth and differentiation.

BIOL 303. Microbiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The morphological, biochemical, taxonomic, genetic and evolutionary characteristics of microorganisms with a primary focus on bacteria. Focuses on the structural, mechanical and biochemical adaptations employed by microorganisms in their interactions with host cells and substrates.

BIOL 304. Biology Skills. 2 Hours.

Semester course; 1 lecture hour (delivered online) and 3 laboratory hours. 2 credits. Prerequisites: BIOL 151 and BIOZ 151 and permission of instructor. This course provides a hands-on experience in laboratory techniques, emphasizes the development of library and informational fluency skills, and uses current biological and/or biomedical research topics to aid in development of critical-thinking and problem-solving skills.

BIOL 307. Aquatic Ecology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. The physical, chemical and especially the biological aspects of freshwater ecosystems.

BIOL 308. Vertebrate Histology. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 300 with a minimum grade of C. Microanatomy of vertebrate cells, tissues and organs and the relationship of structure to function. Laboratory work involves an in-depth study of vertebrate microanatomy at the light microscope level as well as an introduction to techniques used for the preparation of materials for histological study.

BIOL 309. Entomology. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A field-based course that focuses on insect diversification, identification, natural history and basic biology.

BIOL 310. Genetics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152; BIOZ 151 or LFSC/BNFO 251; BIOZ 152 or LFSC/BNFO 252; BIOL 300; CHEM 101; and CHEZ 101, each with a minimum grade of C; and BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212 or STAT 314. Biology majors must have completed BIOL 200. Pre- or corequisites: CHEM 102 and CHEZ 102. The basic principles of molecular and applied genetics of plants, animals and microorganisms.

BIOL 312. Invertebrate Zoology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A survey of the invertebrate animals with emphasis on environmental interactions. A weekend trip to a marine environment is required.

BIOL 313. Vertebrate Natural History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. The natural history of vertebrates with emphasis on the species native to Virginia.

BIOL 314. Animal Reproduction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151, BIOL and BIOZ 152, and BIOL 300, each with a minimum grade of C. Introduction to basic reproductive anatomy and physiology. Examination of the basic factors that affect reproductive performance and how these factors are used to regulate the reproductive processes of domestic animals and humans.

BIOL 317. Ecology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152; BIOZ 151 or LFSC/BNFO 251; BIOZ 152 or LFSC/BNFO 252; CHEM 101 and CHEZ 101, all with a minimum grade of C; BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212 or STAT 314. Biology majors must have completed BIOL 200. An introduction to the basic principles of ecology, including interactions among organisms and influences of the physical environment.

BIOL 318. Evolution. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152; BIOZ 151 or LFSC/BNFO 251; BIOZ 152 or LFSC/BNFO 252; CHEM 101 and CHEZ 101, all with a minimum grade of C; BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212 or STAT 314. Biology majors must have completed BIOL 200. An exploration of the theoretical and empirical foundations of evolutionary biology with a focus on the processes driving evolutionary change across all of life.

BIOL 320. Biology of the Seed Plant. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL and BIOZ 151 and BIOL and BIOZ 152, each with a minimum grade of C. The physiology, structure and adaptation of seed plants.

BIOL 321. Plant Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and 310, each with a minimum grade of C. A survey of the developmental changes that take place during the life cycle of lower and higher plants. Emphasis is placed on the control factors that are involved in regulating the ordered changes which take place during development.

BIOL 322. Economic Botany. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152 and BIOZ 151 and 152, or equivalents, with minimum grades of C. This class focuses on plant morphology, anatomy, phytochemistry, growth and reproduction through an examination of the biology of economically and culturally important plants, including crops used for foods and beverages, medicines and drugs, fibers, and timber.

BIOL 324. Medicinal Botany. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and BIOZ 151; BIOL 152 and BIOZ 152; and BIOL 300, all with a minimum grade of C. Topics include plant anatomy, morphology and reproduction; traditional plant medicine such as Ayurveda and traditional Chinese medicine; plant defense systems and secondary metabolites; and plant-derived drugs for various illnesses/ailments including cancer, arthritis, depression and diabetes.

BIOL 325. Fungal Biology. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The basic biology of fungi, including growth, structure, genetics, diversity, the commercial uses of fungi and their importance as model organisms. Also discusses the interactions between fungi and plants and fungi and humans.

BIOL 332. Environmental Pollution. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: eight credits in biology. The study of pollution in the environment with emphasis on the procedures for detection and abatement. Crosslisted as: ENVS 330.

BIOL 333. Evolution of the Angiosperms. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, all with minimum grade of C. Application of evolutionary concepts to flowering plants. Topics include speciation concepts, evolution of vegetative and sexual characteristics and an overview of angiosperm diversity to the level of family.

BIOL 335. Global Change Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151 and BIOZ 152, all with minimum grade of C. Examines how humans influence biological systems and explores what can be done to adapt to or to mitigate future global change, emphasizing anthropogenic climate change.

BIOL 340. Development and Stem Cells. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and CHEM 102, each with a minimum grade of C. Basic principles of developmental biology and stem cells of vertebrates, pinpointing the underlying cellular and molecular mechanisms that guide development and stem cell biology. Significant emphasis on medical aspects of development such as human birth defects, cloning, properties of stem cells and their medical uses, and careers in developmental and stem cell biology.

BIOL 341. Human Evolution. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. Introduces the range of human diversity as well as a broad understanding of evolution and evolutionary biology, particularly as it applies to hominid evolution. Specific topics include basic genetics, primatology, paleontology and the hominin fossil record. Crosslisted as: ANTH 301.

BIOL 351. Introduction to Bioinformatics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BNFO 201 and BNFO 300 or permission of instructor. The course will present a practical and theoretical introduction to the tools and techniques needed to obtain and interpret a variety of genome-related data types. The course will include several bioinformatic methods underlying nucleotide and protein sequence alignment, statistical methods for data visualization in R, the types of experimental results commonly encountered in bioinformatics data analysis and the public databases where these data can be accessed. Crosslisted as: BNFO 301.

BIOL 391. Topics in Biology. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. Prerequisites: BIOL 152 and BIOZ 152; and BIOL 300, BIOL 310, BIOL 317 or BIOL 318, each with a minimum grade of C. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

BIOL 392. Introduction to Research. 2 Hours.

Semester course; 1 lecture and 1 demonstration hour. 2 credits. Prerequisite: BIOL 300, BIOL 310, BIOL 317 or BIOL 318 with a minimum grade of C. An introduction to the scientific process, including the mechanics of problem definition, information gathering and experimental design. Experimentation is discussed in context with methods of data collection and analysis. Aims are to prepare the student for future research experiences and to have the student write detailed research proposals.

BIOL 395. Directed Study. 1-2 Hours.

Semester course; 1-2 independent study hours. 1-2 credits. Prerequisites: BIOZ 151 and BIOZ 152 with minimum grades of C, permission of the Department of Biology and research mentor. A maximum of two credits may be earned between BIOL 395 and BIOZ 395; maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. Mentors are not limited to faculty members within the Department of Biology, but the context of the research study must be applicable to the biological sciences as determined by the department. Studies should include directed readings, directed experimentation or advanced guided inquiry — all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. This course may not apply as a laboratory experience. Graded as pass/fail.

BIOL 401. Applied and Environmental Microbiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 300 and 317, each with a minimum grade of C. The biology and chemical activities of microorganisms (bacteria, algae, virus and fungi) of industrial, pharmaceutical and agricultural importance.

BIOL 402. Comparative Vertebrate Anatomy. 5 Hours.

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisites: BIOL 300 and BIOL 318, each with a minimum grade of C. The evolution of vertebrate forms as demonstrated by anatomical studies of selected vertebrate types.

BIOL 403. Primatology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210 or ANTH 301/BIOL 341. Primatology investigates the taxonomic relationships among primates through comparative anatomy, comparative behavior and comparative biochemistry. Study of primate evolution, demography, subsistence, reproduction, social organization, communication systems and ecology. Crosslisted as: ANTH 403.

BIOL 411. Physiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and CHEM 301, each with a minimum grade of C. Focuses on the characterization and understanding of the function and mechanisms of major physiological systems, primarily using human physiology as a model. Emphasis is placed on understanding how different physiological systems work together to maintain homeostasis and predicting the consequences of damaging or deleting system components that can occur in diseases and injuries.

BIOL 413. Parasitology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The epidemiology and pathological effects of eukaryotic parasites, including parasite life cycles and host-parasite relationships.

BIOL 415. Mangrove Avian Field Ecology. 4 Hours.

Semester course; two weeks abroad in Panama (or other tropical location with mangrove forests) followed by class meetings two days per week throughout most of spring semester. 4 credits. Prerequisite: BIOL 317. An immersive study of tropical ecology with a focus on bird ecology and conservation of mangrove ecosystems through a unique blend of rigorous science and community engagement. Two weeks of study abroad, including engagement with local conservation organizations and participation in education outreach with local schools, followed by discussion, data analysis and presentation of progress and research in a public symposium on campus.

BIOL 416. Ornithology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 with a minimum grade of C. Provides an integrative study of birds, including avian evolution and diversity, general anatomy and physiology, behavior, and ecology.

BIOL 417. Mammalogy. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 218 and 317 with minimum grades of C. Study of the characteristics, adaptive radiation and distribution of mammals, with emphasis on North American forms.

BIOL 420. Yeast and Fermentation. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. Corequisites: BIOL 303 and BIOL 310. Addresses the basic biology of yeast used in brewing beer and briefly in wine production. Topics will include yeast properties such as growth, structure, genetics, biodiversity and natural habitats. The process of wine and beer production will be discussed. Laboratory sessions include basic microbiology techniques, yeast isolations and characterization using DNA and biochemical methods, as well as the study of factors that affect fermentation. At the end of the course the students will give a presentation on other fermentation products of their interest such as vinegar, bread, etc., providing an expanded version of this important process.

BIOL 422. Forest Ecology. 4 Hours.

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317 with a minimum grade of C. Covers the fundamentals of forest ecology, with a particular emphasis on Virginia's diverse forest ecosystems. Students gain an understanding of the principal controls on forest structure, growth and distribution and relate these principles to sustainable forest management.

BIOL 423. Plant Physiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and BIOZ 151; BIOL 152 and BIOZ 152; and BIOL 300 or equivalents, all with minimum grades of C. Physiology of higher plants at molecular, cellular and organism level. Topics include transport processes, metabolism, growth, stress responses and plant-soil interactions.

BIOL 425. Field Botany. 3 Hours.

Semester course; 2 lecture hours and 3 laboratory hours.(60 percent online, 40 percent field/laboratory) 3 credits. Prerequisites: BIOL 310 and BIOL 317, both with minimum grades of C. Online lectures, discussions, reflections and assessments in conjunction with field experience. Explores the effects of environmental conditions on plant morphology and adaptations, with emphasis on plant anatomy, plant physiology and ecology.

BIOL 430. Invasion Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151, BIOZ 152 and BIOL 317, all with minimum grade of C. A comprehensive view of the ecology and impacts of invasive species. Integrates the effects of historical human demography, ecological disturbance, natural history, species interactions, barriers to invasion, invasive species management and impacts on natural communities and ecosystems.

BIOL 431. Introduction to Marine Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. An introduction to physical, chemical and geological oceanography and a more detailed treatment of the organisms and ecological processes involved in the pelagic and benthic environments of the world's oceans and estuaries.

BIOL 435. Herpetology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 with a minimum grade of C. The evolution, ecology, structure, taxonomy and behavior of reptiles and amphibians.

BIOL 438. Forensic Molecular Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 310 with a minimum grade of C. Provides an understanding of molecular biology testing methodologies as applied to analysis of forensic samples. Current topics in forensic DNA analysis will include quality assurance, DNA databanking, contemporary research and population genetics. Crosslisted as: FRSC 438.

BIOL 440. Developmental Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and 310, each with a minimum grade of C. Basic principles of developmental biology focused on vertebrate model organisms with an emphasis on the underlying cellular and molecular mechanisms that guide development.

BIOL 445. Neurobiology and Behavior. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317 with a minimum grade of C. The study of animal behavior stressing ecological, evolutionary and neurobiological approaches.

BIOL 448. Neuroscience. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. Pre- or corequisite: BIOL 310. An examination of the basic structure of the nervous system, nervous system operation on a cellular and molecular level and the formation of the nervous system during development.

BIOL 450. Biology of Cancer I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 with a minimum grade of C or PHIS 309. An examination of the cellular, molecular and clinical aspects of cancer development, progression and treatment.

BIOL 451. Biology of Cancer II. 4 Hours.

Semester course; 1 lecture and 12 laboratory hours. 4 credits. Prerequisites: BIOL 450 and instructor's permission. A maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. An examination of the cellular, molecular and clinical aspects of cancer development, progression and treatment.

BIOL 452. Biology of Drugs. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. Explores how drugs modulate biological signaling pathways to study, cure, enhance and intoxicate organisms. An introduction to basic pharmacology that largely focuses on human pathways and diseases. Topics include major drug classes (cardiovascular, gastrointestinal, etc.) and drugs of abuse (alcohol, marijuana, etc.).

BIOL 453. Cancer Biology Thesis. 4 Hours.

Semester course; 1 recitation and 12 laboratory hours. 4 credits. Prerequisite: BIOL 451. A maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. Enrollment is restricted to students with permission of the instructor and research mentor. Students will benefit from invaluable learning opportunities in cancer research including hands-on learning, direct mentorship from a VCU faculty member, scientific writing skills, time and research project management, and exposure to and training in various laboratory techniques. In addition, students will gain experience in preparation of a cancer research proposal and thesis.

BIOL 455. Immunology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C or PHIS 309. A comprehensive introduction to the immune system of higher animals, emphasizing the molecular and cellular basis for antibody-mediated immunity.

BIOL 459. Infectious Disease Ecology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151, BIOZ 152 and BIOL 317, all with minimum grade of C. A comprehensive and up-to-date overview of the causes and consequences of infectious disease at levels from individual organisms to global scale. Examines the history of infectious disease ecology in human and nonhuman populations. Students learn about the roles of transmission and coevolution in infectious disease ecology and how population models are used to inform management of epidemics and emerging infectious diseases.

BIOL 460. Human Evolutionary Genetics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 318 or BIOL 341 with a minimum grade of C. The origin and genetic history of modern humans, our historic colonization and migration, the utility of the Human Genome Project, our differences from other primates, adaptation to our environment and disease, and the ethical implications of genetic research in our society.

BIOL 475. Biology Capstone Seminar. ____ 1-3 Hours.

Semester course; 1-3 seminar hours. 1-3 credits. Prerequisites: BIOL 300, BIOL 310, BIOL 317 and BIOL 318, each with a minimum grade of C. Enrollment is restricted to biology majors with senior standing. Students read assigned topical papers before class, prepare critical analyses, discuss and debate selected positions. See Schedule of Classes for specific topics.

BIOL 477. Biology Capstone Experience. 0 Hours.

Semester course; variable hours. 0 credits. Prerequisites: BIOL 300, BIOL 310, BIOL 317 and BIOL 318, each with a minimum grade of C; and 90 hours of undergraduate course work. The following courses qualify as a capstone experience if taken concurrently with this course: BIOL 492, BIOL 493, BIOL 495, BIOL 497 or other courses, including topics courses, which include the core competencies required for a capstone experience and are approved by the chair of the Department of Biology. Graded as pass/fail.

BIOL 480. Animal-Plant Interactions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 or BIOL 318 with a minimum grade of C, or permission of the instructor. Ecological and evolutionary consequences of interactions among animals and plants.

BIOL 482. Preceptor Experience. 0 Hours.

Semester course; 0 hours. 0 credits. Enrollment is restricted to students who have completed the relevant course for which they will be a teaching assistant with a minimum grade of B and who have a minimum cumulative GPA of 3.0. Permission of instructor and departmental chair also required prior to registration. Teaching assistants will enhance their knowledge of course content and develop skills that are natural to an instructional role, an understanding of the learning process within a discipline and the ability to explain the importance and value of course content to a novice audience. Graded as pass/fail.

BIOL 484. Research Assistant Experience. 0 Hours.

Semester course; 0 hours. 0 credits. Enrollment is restricted to students with permission of the departmental chair and limited to students for whom a research supervisor has agreed to be a mentor. Helps facilitate student involvement in research laboratories within the Department of Biology. Students will gain hands-on experience including data collection and analysis, learning field and/or laboratory techniques, and/or mastering experimental procedures, all under the direct supervision of a faculty member. Graded as pass/fail.

BIOL 489. Communicating Research. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: Completion of the Biocore with minimum grades of C. Corequisite: BIOL 495, senior standing. An opportunity for students to develop skills necessary for effective communication of their research in writing. Includes a variety of seminar discussions and activities including preparation of figures for publication and the crafting of a research paper with correct usage of the primary literature. Students will use this as an opportunity to aid the writing of their thesis for BIOL 495.

BIOL 490. Presenting Research. 1 Hour.

Semester course; 1 credit. Prerequisite: Completion of the Biocore with minimum grades of C. Pre- or corequisites: BIOL 492 or 495, and senior standing. Opportunity for students to develop skills necessary for effective oral presentation of their research work. Includes a variety of seminar discussions and activities such as preparation of visual materials and statistical analysis of data. Students will make several oral presentations directly related to their specific BIOL 492 or 495 projects.

BIOL 491. Topics in Biology. 1-4 Hours.

Semester course; variable hours. Variable credit. Prerequisite: BIOL 300. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

BIOL 492. Independent Study. 1-4 Hours.

Semester course; 1-4 independent study hours. 1-4 credits. Prerequisites: BIOZ 151 and BIOZ 152, each with a minimum grade of C; and permission of the chair of the Department of Biology. May be repeated for credit. A maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. Projects should include data collection and analysis, learning field and/or laboratory techniques, and/or mastering experimental procedures, all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. A final report must be submitted at the completion of the project.

BIOL 493. Biology Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. Prerequisites: BIOL 310 or 317 with minimum grades of C; and permission of the chair of the Department of Biology and of the agency, company or organization in which internship will be held. May be repeated for credit. Students may take a maximum of three credits per semester; maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. One credit is awarded for each 100 hours of work experience in professional biology setting. Internship designed to provide laboratory or field experience in an off-campus professional biology setting. A final report must be submitted upon completion of the internship. Graded as pass/fail.

BIOL 495. Research and Thesis. 1-4 Hours.

Semester course; 1-4 research hours. 1-4 credits. Prerequisites: BIOL 392, permission of the supervising faculty member and a research proposal acceptable to the departmental chair. Corequisite: BIOL 489 or BIOL 490. May be repeated for a maximum of eight credits. Students may take a maximum of four credits per semester; maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. A minimum of four credits is required for honors in biology. Activities include field and/or laboratory research under the direct supervision of a faculty mentor. A minimum of three hours of supervised activity per week per credit hour is required. Research projects must include experimental design and analysis of data. This course must be taken for two consecutive semesters starting in the fall. A written thesis of substantial quality is required upon completion of the research.

BIOL 496. Biology Preceptorship: _____. 2 Hours.

Semester course; 2 practicum hours. 2 credits. May be repeated with a different course for credit. Enrollment restricted to students who have completed the relevant course with a minimum grade of B and who have a minimum cumulative GPA of 3.0. Permission of instructor is required prior to registration. Preceptors assist instructors in lecture (BIOL) or laboratory (BIOZ) courses. Responsibilities vary and may include, but are not limited to, attending class, conducting review sessions and preparing course study/review materials. Graded as pass/fail. A maximum of four combined credits from BIOL 496 and BIOL 499 may be applied to degree requirements.

BIOL 497. Ecological Service Learning. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: BIOL 317 with a minimum grade of C. A service-learning course coupled to course content and material taught in BIOL 317. Students will seek out ecologically relevant opportunities with local, state and federal community partners who will provide experiences to enhance academic enrichment and personal growth and will help foster a sense of civic responsibility. Students must complete a minimum of 20 service-learning hours with community partner(s).

BIOL 498. Insects and Plants Service-learning. 2 Hours.

Semester course; 2 field experience hours. 2 credits. Prerequisites: BIOL 317 or BIOL 318 with a minimum grade of C, and permission of the instructor. A service-learning course related to insect-plant interactions. Field experience with community partners, including public parks, botanical gardens and organic farms. Designed to expand academic instruction, enhance personal growth and foster a sense of civic responsibility. Students must complete a minimum of 40 service-learning hours with a community partner.

BIOL 499. Biology Lead Preceptorship. 2 Hours.

Semester course; 2 practicum hours. 2 credits. Prerequisite: BIOL 496 in the same course with a grade of Pass. Enrollment is restricted to students who have completed the relevant course with a minimum grade of B and who have a minimum cumulative GPA of 3.0. Permission of the instructor is required prior to registration. Lead preceptors assist instructors in lecture (BIOL) or laboratory (BIOZ) courses. Responsibilities cumulate beyond those required in the prerequisite course. Responsibilities vary and may include, but are not are limited to, organizing preceptor teams for large enrollment courses, preceptor mentorship, data entry of course materials, execution of group work, etc. Graded as pass/fail. A maximum of four combined credits from BIOL 496 and BIOL 499 may be applied to degree requirements.

Biology Lab (BIOZ)**BIOZ 101. Biological Concepts Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 101, 151 or 152. Laboratory exercise correlated with BIOL 101. Not applicable for credit toward the B.S. in Biology.

BIOZ 151. Introduction to Biological Science Laboratory I. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisite: MATH 141, MATH 151, MATH 200, MATH 201 or a satisfactory score on the math placement exam; and CHEM 100 with a minimum grade of B, CHEM 101 with a minimum grade of C or a satisfactory score on the chemistry placement exam. Corequisite: BIOL 151. Laboratory investigation of cellular metabolism, genetics and molecular biology, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 151.

BIOZ 152. Introduction to Biological Science Laboratory II. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, BIOZ 151 and CHEM 101, each with a minimum grade of C. Corequisite: BIOL 152. Laboratory investigation of evolutionary concepts, evolution of organisms, biological diversity and ecology, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 152.

BIOZ 201. Human Biology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 201. Laboratory exercises correlated with BIOL 201 Human Biology. Exercises emphasize the structure, function and disorders of human body systems, principles of human genetics and inheritance, and human evolution and ecology. Not applicable for credit toward the B.S. in Biology.

BIOZ 209. Medical Microbiology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 209. Techniques to culture, isolate and identify microbes with related topics such as water coliform tests, and antibiotics and disinfectant sensitivity testing. Not applicable for credit toward the B.S. in Biology.

BIOZ 303. Microbiology Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL 303. Laboratory application of techniques and concepts in microbiology. Emphasis is placed on techniques to isolate, culture and identify bacteria; genetics and molecular biology of bacteria; safety and aseptic protocols; assays for antibiotic and disinfectant susceptibility.

BIOZ 307. Aquatic Ecology Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. Pre- or corequisite: BIOL 307. Laboratory and field studies of the biota of aquatic habitats and their relationship with the environment.

BIOZ 310. Laboratory in Genetics. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: UNIV 200 or HONR 200; and BIOL 152 and BIOZ 152, each with a minimum grade of C. Pre- or corequisite: BIOL 310. Demonstrates the laws and molecular basis of heredity through exercises and experiments that use a variety of organisms.

BIOZ 312. Invertebrate Zoology Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL and BIOZ 151 and 152, with minimum grades of C. Pre- or corequisite: BIOL 312. A laboratory survey of the invertebrate animals, with emphasis on environment interactions. A weekend trip to a marine environment is required.

BIOZ 313. Vertebrate Natural History Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL and BIOZ 151 and 152, with minimum grades of C. Pre- or corequisite: BIOL 313. Laboratory exercises focusing on the natural history of vertebrates, with emphasis on the species native to Virginia.

BIOZ 317. Ecology Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: BIOL and BIOZ 151 and 152, and UNIV 200 or HONR 200; all with minimum grades of C. Pre- or corequisite: BIOL 317. A field-oriented course that provides experience in ecological research, including experimental design, instrumentation, data collection and data analysis.

BIOZ 321. Plant Development Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL 321. An experimental approach applied to a phylogenetic survey of developmental model systems. Observational and experimental protocols will be used to collect data and gather information. Problem-solving skills will be utilized to analyze and present experimental results.

BIOZ 324. Medicinal Botany Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Prerequisites BIOL 151 and BIOZ 151; BIOL 152 and BIOZ 152; and BIOL 300, all with a minimum grade of C. Pre- or corequisite: BIOL 324. Introduces basic plant biology concepts, plant diversity and systematics, and various medicinal plant species, compounds and properties.

BIOZ 341. Human Evolution Lab. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: BIOL 341/ ANTH 301. Laboratory exercises correlated with BIOL 341/ANTH 301. Exercises emphasize comparative primate and fossil anatomy, morphology and behavior, as well as practice in recognizing and applying evolutionary principles in human evolution. Crosslisted as: ANTZ 301.

BIOZ 391. Topics in Biology Laboratory. 1-4 Hours.

Semester course; 1-4 laboratory hours. 1-2 credits. Prerequisite: BIOL 300, BIOL 310, BIOL 317 or BIOL 318, with a minimum grade of C. Laboratory investigations in a selected topic of biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

BIOZ 395. Directed Study. 1-2 Hours.

Semester course; 1-2 independent study hours. 1-2 credits. Prerequisites: BIOZ 151 and BIOZ 152 with minimum grades of C, permission of the Department of Biology and research mentor. A maximum of two credits may be earned between BIOL 395 and BIOZ 395; maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL 495 and/or BIOZ 395) may be applied to the the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. Mentors are not limited to faculty members within the Department of Biology, but the context of the research study must be applicable to the biological sciences as determined by the department. Studies should include directed readings, directed experimentation or advanced guided inquiry — all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. Graded as pass/fail.

BIOZ 416. Ornithology Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisite: BIOL 317 with a minimum grade of C. Pre- or corequisite: BIOL 416. A field-oriented course that develops basic skills in bird identification by sight and sound for a variety of regional taxa with emphasis on avian anatomy and adaptations for flight. Students conduct an independent or small-group research project on a question of their choice relating to avian ecology or behavior, including experimental design, data collection and analysis, and a final project presentation.

BIOZ 418. Integrative Physiology Laboratory. 3 Hours.

Semester course; 2 recitation and 3 laboratory hours (hybrid course taught mostly on campus). 3 credits. Prerequisites: BIOL 151 and BIOZ 151; BIOL 152 and BIOZ 152; and BIOL 300; or equivalents, all with minimum grades of C. Corequisite: BIOL 411 or BIOL 423. A comparative laboratory investigation of physiological responses across plant and animal taxa, with application to changing environmental conditions and ecological interactions. Topics include metabolism, water balance, gas exchange, resource allocation and chemical signaling.

BIOZ 438. Forensic Molecular Biology Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL/FRSC 438. Provides comprehensive coverage of the various types of DNA testing currently used in forensic science laboratories. Students will have hands-on experience with the analytical equipment employed in forensic science laboratories and the techniques for human identification in forensic casework. Students also will explore and practice both scientific writing and writing of DNA case reports. Crosslisted as: FRSZ 438.

BIOZ 476. Molecular Capstone Laboratory. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: BIOL 300 and BIOL 310, each with a minimum grade of C; and 90 credit hours of undergraduate course work. Application of basic methods used in cellular and molecular biology to the investigation of topics of current biological interest. Emphasis on experimental design, data collection and analysis, communication skills, critical thinking, and ethical and social responsibility.

BIOZ 491. Topics in Biology Laboratory. 1-4 Hours.

Semester course; variable hours. Variable credit. Prerequisites: BIOL 300 with a minimum grade of C. Laboratory investigations in a selected topic of biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

Chemistry (CHEM)**CHEM 100. Introductory Chemistry. 3 Hours.**

Semester course; 3 lecture and 1 problem session hour. 3 credits. Prerequisite: students must be eligible to take MATH 131 or higher. A course in the elementary principles of chemistry for individuals who do not meet the criteria for enrollment in CHEM 101; required for all students without a high school chemistry background who need to take CHEM 101-102. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

CHEM 101. General Chemistry I. 3 Hours.

Semester course; 3 lecture and 1 recitation hours. 3 credits. Prerequisites: MATH 141, MATH 151, MATH 200, MATH 201 or satisfactory score on the VCU mathematics placement test within the one-year period immediately preceding the beginning of the course; and CHEM 100 with a minimum grade of B or satisfactory score on the chemistry placement exam/assessment within the one-year period immediately preceding the beginning of the course. Fundamental principles and theories of chemistry.

CHEM 102. General Chemistry II. 3 Hours.

Semester course; 3 lecture and 1 recitation hours. 3 credits. Prerequisites: MATH 151, MATH 200, MATH 201 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course; and CHEM 101 with a minimum grade of C. Fundamental principles and theories of chemistry, including qualitative analysis.

CHEM 110. Chemistry and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are presented through the use of decision-making activities related to real-world societal issues. Not applicable for credit toward the B.S. in Chemistry.

CHEM 112. Chemistry in the News. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are used to interpret newspaper and magazine articles of current interest relating to chemistry in manufacturing, the global environment and medicine. Not applicable for credit toward the B.S. in Chemistry.

CHEM 301. Organic Chemistry. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: CHEM 102 with a minimum grade of C. Prerequisite for CHEM 302: CHEM 301 with a minimum grade of C. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms and stereochemistry.

CHEM 302. Organic Chemistry. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: CHEM 102 with a minimum grade of C. Prerequisite for CHEM 302: CHEM 301 with a minimum grade of C. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms and stereochemistry.

CHEM 303. Physical Chemistry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 309 or CLSE 201 with minimum grades of C, and PHYS 202 or PHYS 208, and MATH 201 or MATH 301 or MATH 307. Ideal and nonideal gases, thermodynamics, free energy and chemical equilibrium.

CHEM 304. Physical Chemistry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 303 with a minimum grade of C. Kinetics, solution thermodynamics, heterogeneous equilibria, electrochemistry and introductory biophysical chemistry.

CHEM 305. Physical Chemistry for the Life Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301-302 and CHEM 309 with minimum grades of C; and MATH 200. Concepts and principles of physical chemistry as related to the life sciences, forensic science and the B.S. in science programs. Major topics include thermodynamics of proteins and nucleic acids, enzyme kinetics and spectroscopic techniques useful in biophysical research such as circular dichroism, nuclear magnetic resonance and magnetic resonance imaging.

CHEM 306. Industrial Applications of Inorganic Chemistry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 and CHEZ 302. Chemical engineering students: EGRC 201 and EGRC 205. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, materials and energy balance, availability and logistics of starting materials, economic impact and environmental effects. Crosslisted as: CLSE 306.

CHEM 308. Intensified Problem-solving in Quantitative Analysis. 2 Hours.

Semester course; 4 workshop hours. 2 credits. Prerequisites: CHEM 102 with a minimum grade of C; and MATH 151. Corequisite: CHEM 309. Designed to improve student comprehension and success in CHEM 309 and CHEZ 309. Problem-solving sessions encompass the fundamental topics in chemical analysis that involve the theory and practice of gravimetric, volumetric and instrumental analysis techniques, including the treatment of multiple equilibria in aqueous solutions. Students form and work in small in-class study groups where they engage in cooperative learning activities as facilitated by the instructor. Each student participates in the discussion and presentation of problem solutions to the class. Students are given mock quizzes and exams and receive assistance on homework problems assigned in the quantitative chemistry lecture.

CHEM 309. Quantitative Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 102 with a minimum grade of C, and MATH 151. Theory and practice of gravimetric, volumetric and instrumental analysis techniques and treatment of multiple equilibria in aqueous solutions.

CHEM 310. Medicinal Chemistry and Drug Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 302. This course is designed to expose undergraduate chemistry, biology and pre-medicine majors to the history, theory and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs. Crosslisted as: MEDC 310.

CHEM 313. Physical Chemistry I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201; MATH 307; PHYS 202 or PHYS 208; CHEM 302; and CHEM 309, all with a minimum grade of C. Quantum chemistry, atomic and molecular structure, spectroscopy. Students may receive credit toward graduation for only one of CHEM 313 or CHEM 314.

CHEM 314. Physical Chemistry I with Math Modules. 4 Hours.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: MATH 201; PHYS 202 or PHYS 208; CHEM 302; and CHEM 309, all with a minimum grade of C. Quantum chemistry, atomic and molecular structure, spectroscopy. Presents multivariate calculus concepts necessary for physical chemistry. Students may receive credit toward graduation for only one of CHEM 313 or CHEM 314.

CHEM 315. Physical Chemistry II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 313 or CHEM 314 with a minimum grade of C. Kinetic theory of gases, statistical and classical thermodynamics, kinetics.

CHEM 320. Inorganic Chemistry I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101-102 with minimum grades of C. A systematic, unified study of the structures, properties, reactions and practical applications of inorganic compounds.

CHEM 350. Guided Inquiry in Chemistry. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Prerequisites: CHEM 101-102 with minimum grades of B. Student facilitators lead recitation sections using guided inquiry, group-based activities. Introduces students to the principles of guided inquiry, active learning and collaborative learning in chemistry through practical, hands-on class work, discussions, readings and a final project.

CHEM 351. Chemistry Preceptorship. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Course may be repeated once for a total of 3 credits. Prerequisites: completion of relevant course with minimum grade of C, completion of CHEM 350 with a grade of B and permission of course instructor and departmental chair. Student facilitators lead recitation sections or laboratories in chemistry courses. Responsibilities vary and may include, but are not limited to, attending all classes, holding weekly review sessions or office hours and/or routine grading. A weekly reflection journal and final project are required.

CHEM 391. Topics in Chemistry. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 101-102 and CHEZ 101, 102. A study of a selected topic in chemistry. See the Schedule of Classes for specific topics to be offered each semester.

CHEM 392. Directed Study. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits; only 3 credits are applicable to the chemistry major. Prerequisites: CHEM 102 and CHEZ 101 and 102. The independent investigation of chemical problems through readings and experimentation under the supervision of a research adviser. Written interim and final reports are required.

CHEM 398. Professional Practices and Perspectives Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: CHEM 102 and CHEZ 102, each with a minimum grade of C. Enrollment is restricted to chemistry majors with at least sophomore standing. Seminar course for students considering careers in chemistry-related fields, covering topics such as scientific professionalism and ethics and using chemical literature.

CHEM 401. Applications of Instrumental Techniques in Organic and Forensic Chemistry. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: CHEM 302 and CHEZ 302. Theory and laboratory practice of instrumental and chemical methods applied to the analysis of organic compounds with emphasis on applications in forensic chemistry.

CHEM 403. Biochemistry I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 with a minimum grade of C. A presentation of structural biochemistry, enzymology, biophysical techniques, bioenergetics and an introduction to intermediary metabolism.

CHEM 404. Biochemistry II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 403 with a minimum grade of C. A presentation of metabolism and its regulation as integrated catabolism and anabolism of molecules that are essential to life.

CHEM 406. Inorganic Chemistry II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 313 or CHEM 314; and CHEM 320. An advanced study of inorganic chemistry, including inorganic spectroscopy, organometallic compounds and catalysis, and bioinorganic systems.

CHEM 409. Instrumental Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 313, CHEM 314 or CHEM 315; and CHEM 309 and CHEZ 309. Theory and practice of modern spectrophotometric, electroanalytical and chromatographic and nuclear magnetic resonance methods.

CHEM 491. Topics in Chemistry. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 102 and CHEZ 101 and 102. A study of a selected topic in chemistry. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

CHEM 492. Independent Study. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits; only 3 credits are applicable to the chemistry major. Prerequisites: CHEM 102 and CHEZ 101 and 102. The independent investigation of chemical problems through readings and experimentation under the supervision of a research adviser. Written interim and final reports required.

CHEM 493. Chemistry Internship. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits; 1 credit will be given for each 150 hours (approximately one month) of part-time or full-time chemical work experience. Prerequisites: CHEM 102 and CHEZ 101 and 102. Acquisition of chemistry laboratory experience through involvement in a professional chemistry setting. Written progress and final reports will be required.

CHEM 498. Honors Thesis. 1 Hour.

Semester course; 1 credit. Prerequisites: completion of 29 credits in chemistry, including CHEM 398 and at least six credits of CHEM 492. Students submit to the Department of Chemistry a thesis based on their independent study research. Students also present their results to the department as a research seminar.

CHEM 499. Chemistry Capstone Experience. 0 Hours.

Semester course; 0 hours. 0 credits. Prerequisites: CHEZ 302, CHEZ 309, CHEM 320, CHEM 398, CHEM 313 or CHEM 314, and CHEZ 313 or CHEZ 315, each with a minimum grade of C. Enrollment is restricted to chemistry majors with 90 credit hours of undergraduate course work. Culminating course that requires two credits of advanced laboratory and three credits of advanced lecture. The following courses qualify as a capstone experience if taken concurrently with CHEM 499: any two-credit 400-level laboratory course or two credits of either CHEM 392 or CHEM 492; and any three-credit 400-level or 500-level chemistry lecture course. Graded as pass/fail.

Chemistry Lab (CHEZ)**CHEZ 101. General Chemistry Laboratory I. 1 Hour.**

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 101. Experimental work correlated with CHEM 101 with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 102. General Chemistry Laboratory II. 1 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Prerequisites: CHEM 101 and CHEZ 101 with minimum grades of C. Pre- or corequisite: CHEM 102. Experimental work includes qualitative analysis with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 110. Chemistry and Society Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 110. Experimental work correlated with CHEM 110. Not applicable for credit toward the B.S. in Chemistry. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 301. Organic Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 301. Experimental work correlated with CHEM 301. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 302. Organic Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 301 and CHEZ 301 with minimum grades of C. Pre- or corequisite: CHEM 302. Experimental work correlated with CHEM 302. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 303. Physical Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102. Pre- or corequisites: CHEM 303, 309 and CHEZ 309. This course covers experiments in calorimetry, molecular and thermodynamic properties of gases and liquids, surfaces, electrochemistry, equilibria, polymers, phase diagrams, and biophysical chemistry. Extensive report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

CHEZ 304. Physical Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 303, 309 and CHEZ 303, 309. Pre- or corequisite: CHEM 304. This course covers experiments in absorption and emission spectroscopy, infrared and Raman spectroscopy, NMR spectroscopy, kinetics, photochemistry, biophysical chemistry and modeling. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

CHEZ 309. Quantitative Analysis Laboratory. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 309. Laboratory associated with quantitative analysis. Includes practice in volumetric and instrumental laboratory techniques as applied to measurement sciences.

CHEZ 313. Physical Chemistry Laboratory I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEZ 309 and UNIV 200, each with a minimum grade of C. Corequisite: CHEM 313 or CHEM 314. Mathematical models of chemistry, including molecular structure, spectroscopy and kinetics. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required. Students may receive credit toward graduation for only one of CHEZ 313 or CHEZ 315.

CHEZ 315. Physical Chemistry Laboratory II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEZ 309 and UNIV 200, each with a minimum grade of C. Corequisite: CHEM 315. Mathematical models of chemistry, including thermodynamics, spectroscopy and kinetics. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required. Students may receive credit toward graduation for only one of CHEZ 313 or CHEZ 315.

CHEZ 400. Exploring the Frontiers of Chemistry: Research Methods. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 302 and CHEZ 302; CHEM 309 and CHEZ 309; CHEM 320; and CHEM 398, all with a minimum grade of C. Enrollment is restricted to students with 90 undergraduate credit hours. Introduction to the process of performing cutting-edge research in chemistry through the design, execution and presentation of a research project. A final presentation is required.

CHEZ 404. Biochemistry Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 403; CHEZ 302; and CHEZ 313 or CHEZ 315; each with a minimum grade of C. Corequisite: CHEM 404. Fundamental biochemistry laboratory techniques. Report and laboratory notebook writing are emphasized. A final presentation is required.

CHEZ 406. Inorganic Chemistry Laboratory. 2 Hours.

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 320 and CHEZ 102. Pre- or corequisite: CHEM 406. Examination of inorganic nonmetal, transition metal and organometallic compounds using modern inorganic methods of synthesis and characterization. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

CHEZ 409. Instrumental Analysis Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 313 or CHEM 314; and CHEZ 313 or CHEZ 315, each with a minimum grade of C. Corequisite: CHEM 409. Practice of electrochemical, spectroscopic and chromatographic methods of analysis.

CHEZ 413. Advanced Physical Chemistry Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 313 or CHEM 314; and CHEZ 313, all with a minimum grade of C. Corequisite: CHEM 315. Atomic and molecular spectroscopy and structure. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project and presentation are required.

CHEZ 451. Developing Instructional Experiments in Chemistry. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Prerequisite: CHEM 351 with a minimum grade of C. Student preceptors help lead a general chemistry laboratory section and select an experiment to develop for a chemistry laboratory course. A final project and presentation focused on experiment development is required.

Chinese (CHIN)**CHIN 101. Beginning Chinese I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Chinese to take the placement test to determine eligibility. For students with no prior knowledge of Chinese. Beginning grammar, reading, writing and oral skills.

CHIN 102. Beginning Chinese II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHIN 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

CHIN 110. Intensive Elementary Chinese. 8 Hours.

Semester course; 10 lecture and 10 laboratory hours. 8 credits. This intensive course combines CHIN 101 and 102 into a single-semester class. Students may receive credit toward graduation for either the CHIN 101-102 series or CHIN 110, but not both.

CHIN 201. Intermediate Chinese I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHIN 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Chinese. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

CHIN 202. Intermediate Chinese II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHIN 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Mandarin Chinese. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

CHIN 210. Intensive Intermediate Chinese. 6 Hours.

Semester course; 6 lecture hours. 6 credits. This intensive course combines CHIN 201 and 202 into a single-semester class. Students may receive credit toward graduation for either the CHIN 201-202 series or CHIN 210, but not both.

CHIN 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHIN 202 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Mandarin Chinese. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills. This course is not intended for native speakers.

CHIN 301. Self and Society: Effective Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHIN 202, CHIN 300 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Mandarin Chinese. Students advance their knowledge of the Chinese language and Chinese-speaking cultures while developing their reading and writing skills. Students examine a variety of texts and media and gain strategies for interpretation and discussion, with a focus on effective writing. This course is not intended for native speakers.

CHIN 391. Topics in Chinese. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 16 credits. Prerequisite: CHIN 202 or 210. An in-depth study of selected topics in Chinese. See the Schedule of Classes for specific topics to be offered each semester.

Critical Social Inquiry and Justice Studies (CSIJ)**CSIJ 200. Race and Racism in America. 3 Hours.**

Semester course; 2 lecture and 1 recitation hours. 3 credits. Interrogates four key areas of inquiry: origins, ideology, maintenance and resistance to race and racism in the U.S., and applies an intersectional lens to examine how race interlocks with other systems of power. Reflecting the diverse faculty and students who co-created it, this course will draw from a variety of scholarly disciplines spanning the humanities and the social, natural and applied sciences to explore these issues and to help students understand how racism operates in the U.S. Lecture will be delivered asynchronously online and students will attend one weekly 50-minute recitation section. Graded as pass/fail.

English (ENGL)**ENGL 201. Western World Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of Western cultures from the ancient world through the Renaissance, emphasizing connections among representative works.

ENGL 202. Western World Literature II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of Western cultures from the end of the Renaissance to the present, emphasizing connections among representative works.

ENGL 203. British Literature I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the British Isles from the Middle Ages through the 18th century, emphasizing connections among representative works.

ENGL 204. British Literature II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the British Isles from the late 18th century to the present, emphasizing connections among representative works.

ENGL 205. American Literature I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the United States from its origins through the 1860s, emphasizing connections among representative works.

ENGL 206. American Literature II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the United States from the 1860s to the present, emphasizing connections among the representative works.

ENGL 211. Contemporary World Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A study of selected literature published in the past 25 years and chosen from a number of different nations and cultures. Crosslisted as: INTL 211.

ENGL 214. English Grammar and Usage. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 111 and UNIV 112. An intensive study of English grammar, usage, punctuation, mechanics and spelling.

ENGL 215. Reading Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An inquiry into literary and cultural texts, emphasizing critical thinking and close reading. Individual sections may survey a portion of literary history or focus on a theme or unifying question.

ENGL 217. Reading New Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to literary texts published in the new century.

ENGL 236. Women in Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature by and/or about women. Crosslisted as: GSWS 236.

ENGL 250. Reading Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Develops students' visual literacy by exploring and analyzing the various elements of film (cinematography, lighting, editing, art direction, acting and sound, among others). Examples will be drawn from both U.S. and world cinema and from all eras of filmmaking.

ENGL 291. Topics in Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum 6 credits in all topics courses at the 200 level. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature through the in-depth study of a selected topic or genre. See the Schedule of Classes for specific topics to be offered.

ENGL 295. The Reading and Writing of Fiction and Poetry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the basic elements of writing poetry and fiction, using published examples of contemporary fiction and verse as guides in the study of literary form and the production of original creative writing. Students will be offered a practitioner's perspective on genre conventions and the process of revision.

ENGL 301. Introduction to the English Major. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Study of literature focused on skills helpful in the English major, introducing students to the ways in which language is used in literary texts and to the practice of writing responses to those texts. Texts will represent at least two genres (drama, poetry, fiction, creative nonfiction). This course should be taken at the beginning of the student's major, preferably before completing more than six hours of other upper-level English courses. Majors are required to take ENGL 301; they must achieve a minimum grade of C to complete the requirement.

ENGL 302. Legal Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: CRJS 302.

ENGL 303. Writing for Stage and/or Screen. 3 Hours.

Semester course; 3 workshop hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A workshop in playwriting or screenwriting primarily for students who have not yet completed a full-length dramatic work. Students will present a portfolio of work at the end of each course.

ENGL 304. Persuasive Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An advanced study of persuasive prose techniques, with attention to the relationships among content, form and style. Students consider rhetorical techniques used across various genres, and produce and support compelling claims that persuade and inform. They will also acquire skills to interpret, assess and analyze strategies used in a variety of texts. Specific topics vary by section and instructor.

ENGL 305. Writing Poetry. 3 Hours.

Semester course; 3 workshop hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An introduction to the craft of writing poetry. Students will explore the elements of poetic technique and produce a volume of quality work.

ENGL 307. Writing Fiction. 3 Hours.

Semester course; 3 workshop hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A fiction workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course.

ENGL 309. Writing Creative Nonfiction. 3 Hours.

Semester course; 3 workshop hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A creative nonfiction workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course.

ENGL 310. Professional Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An introduction to writing practices common to for-profit and/or not-for-profit organizations. Students hone foundational writing and design skills to communicate effectively with specific audiences across multiple media. Depending on the instructor, this course prepares students to assess and craft effective job application materials, workplace correspondence and other business documents, including digital texts and/or websites.

ENGL 311. Introduction to Literary Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Introduces students to the variety of critical methods that are sometimes employed – often subconsciously or habitually – in writing about literature. Requires students to think abstractly and theoretically about the nature of the literary text, but it also gives students valuable practice in mastering different critical methods through close engagements with short stories, poems and plays.

ENGL 313. Popular Culture Studies:____. 3 Hours.

Semester course; 3 lecture hours. 3 credit hours. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the popular culture of a specific time period, a particular form or an orchestrated phenomenon, with attention paid to the producers, audiences and meanings of the texts. Topics will vary by section.

ENGL 315. Fan Fiction Studies:____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the phenomenon of fan fiction as understood as a disciplinary field. Focuses on creative works and other forms of engagement responding to originating texts in diverse media. Topics will vary by section.

ENGL 320. Early Literary Traditions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of early and medieval literature such as epic, romance, saga or lyric poetry written in England or influencing English literature prior to 1500.

ENGL 321. English Drama From 900 to 1642. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the origin of the English drama and its development until the closing of the theaters in 1642, exclusive of Shakespeare.

ENGL 322. Medieval Literature: Old English to Middle English. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of texts in Old and Middle English, and the literary and cultural traditions that influence the rise of English literature over 500 years from the early to the High Middle Ages, or from Bede and Beowulf to Chaucer.

ENGL 324. Late Medieval Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An introduction to the literature of the 15th and 16th centuries. Works surveyed will likely include those of Langland, Julian of Norwich, Kempe, Malory, Henryson, Skelton, More, Tyndale, Foxe, Surrey, Spenser and Sidney.

ENGL 325. Early Modern Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An introduction to the literature of the 16th and 17th centuries, which may include Sidney, Spenser, Donne, Jonson, Lanyer, Wroth, Phillips, Cavendish, Bradstreet, Hutchinson, Milton and Bunyan.

ENGL 326. Shakespeare in Context. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Examines selected works of Shakespeare in historical, political, sociocultural, literary and/or other contexts.

ENGL 330. Restoration and 18th-century Drama. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of English drama from 1660-1777, usually including the comedy of manners, sentimental comedy, ballad opera, farce and heroic and bourgeois tragedy.

ENGL 331. Restoration and 18th-century British Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of representative poetry, drama and prose from the Restoration and 18th century, usually including Behn, Dryden, Pope, Swift, Johnson and Gay.

ENGL 332. 18th-century British Novels and Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the British narratives in the long 18th century, usually including Defoe, Richardson, Fielding, Burney, Sterne, Austen, Radcliffe and Walpole.

ENGL 335. British Literature of the Romantic Era. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Exploration of the literature and the cultural phenomenon of Romanticism in Britain during the years 1783-1832, with reading from poets such as Blake, Wordsworth, Byron and Shelley, and from a variety of other writers.

ENGL 336. 19th-century British Novels and Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of British narratives of the 19th century, usually including Austen, Dickens, Thackeray, the Brontes, George Eliot and Hardy.

ENGL 337. Victorian Poetry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of the poetry of Victorian Britain, usually including Tennyson, the Brownings, Arnold and the pre-Raphaelites.

ENGL 340. Early 20th-century British Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Representative British and Irish poetry, fiction and drama of the early 20th century, including such writers as Yeats, Joyce, Shaw, Lawrence, Conrad, Auden, Forster and Woolf.

ENGL 341. British Literature and Culture After 1945. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A British studies course that surveys writing in Britain and Ireland since the mid-20th century, with emphasis on social, economic and ideological contexts. Includes such authors as William Golding, Doris Lessing, Seamus Heaney, Harold Pinter, Philip Larkin, Iris Murdoch, Kazuo Ishiguro, Salman Rushdie and Carol Ann Duffy.

ENGL 342. The Modern Novel. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of the novel, chiefly British and European, in the 20th century.

ENGL 343. Modern Poetry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of British and American poetry in the first half of the 20th century.

ENGL 344. Modern Drama. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the development of Continental, English and American drama since Ibsen.

ENGL 345. Contemporary Poetry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of British and American poetry from approximately 1945 to the present for the purpose of determining the aesthetic and thematic concerns of contemporary poets.

ENGL 347. Contemporary Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of internationally prominent texts in various genres produced during the past 30 years. Familiarizes students with distinctive properties of literary expression that have emerged in this period, such as the political, historical, economic and social influences that have shaped literary production.

ENGL 350. Digital Rhetoric. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. The study and practice of rhetoric as it applies to digital media.

ENGL 352. Feminist Literary Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. The study of contemporary feminist thought and feminist approaches to analyzing literature and culture. This course examines the history and development of feminist theory as a methodology in the humanities, explores several of the major theoretical trends of the past 30 years and examines applications of feminist theory to specific works of literature. Crosslisted as: GSWS 352.

ENGL 353. Women's Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit once (for a maximum of six credits) when a different group of writers is studied. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of selected literature written by woman-identified writers. Crosslisted as: GSWS 353.

ENGL 354. Queer Literature: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of queer literature. Considers issues of history, theory, aesthetics, politics, authorship and/or interpretive communities and examines the intersection of social identities with particular attention to race/ethnicity, sex, sexual orientation, gender expression, class and/or nationality. Topics will vary by section. Crosslisted as: GSWS 354.

ENGL 355. Black Women Writers. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Explores the variety of ways African-diasporan women and woman-identified writers gained self-expression in the midst of gender and race oppression from slavery to the present. Also explores the rise of Black feminist discourse as a project of reclaiming and giving voice to writers who had previously been silenced or suppressed. Crosslisted as: GSWS 359.

ENGL 356. Prison Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of prison literature within or across particular time periods and/or geographic places. Explores writings by incarcerated people in consideration of their political, social and economic context.

ENGL 358. Native American and Indigenous Literatures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of Native and/or indigenous writing and representation from the pre-colonial era to the present. Instructors may choose thematic, geographic, generic or period focus for the course.

ENGL 361. The Bible as Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible. Crosslisted as: RELS 361.

ENGL 363. African Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of regional and/or cultural traditions of African literature with special attention paid to socio-political perspectives. Crosslisted as: AFAM 363/INTL 366.

ENGL 364. Mythology and Folklore. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of one or more forms of folklore, such as folktales, fairy tales, legends, myths, proverbs, riddles, ballads and/or games, with some attention to literary, social or historical significance and contexts. This course may also include approaches to collecting material or to examining later literary forms and texts inspired by folklore. Crosslisted as: ANTH 364.

ENGL 365. Caribbean Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: AFAM 365/INTL 367.

ENGL 366. Writing and Social Change: _____. 3 Hours.

Semester course; 3 lecture/workshop hours. 3 credits. May be repeated once for credit with a different topic. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A focused study of the literatures of underserved communities such as those of prisoners, recovering addicts, inner-city teens or immigrants. Students will collaborate with one such community on an original writing project.

ENGL 367. Writing Process and Practice. 3 Hours.

Semester course; 3 lecture/workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Joins writing theory to writing practice. Students will explore their own writing practice and expand their knowledge of rhetorical processes and the teaching/learning of writing. Covers readings and investigations into theories about writing and the writing process, as well as the principles of working one-on-one with student writers. In the latter part of the semester students will devote two hours per week to peer consulting in the Writing Center.

ENGL 368. Nature Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the literary genre of nature writing in English. Crosslisted as: ENVS 368.

ENGL 369. Illness Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An overview of the history, interpretations and practices of reading and writing illness narratives – through case studies and theoretical perspectives, in fictionalized and nonfiction accounts, from the viewpoint of various actors (doctors, patients, patient families and their caregivers). Students will further examine the role of narrative knowledge in health care. Crosslisted as: SCTS 301.

ENGL 370. Medicine in Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of how the representational practices found in literary works may inform or enhance an understanding of a variety of medical issues.

ENGL 371. American Literary Beginnings. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the most important writings from the founding of the first colonies to the establishment of the federal government with attention to such authors as Bradford, Byrd, Bradstreet, Equiano, Cabeza de Vaca and Franklin.

ENGL 372. U.S. Literature: 1820-1865. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the writings of American authors in the middle decades of the 19th century, with attention to such authors as Poe, Emerson, Thoreau, Stowe, Hawthorne, Melville, Douglass and Whitman.

ENGL 373. U.S. Literature: 1865-1913. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of writings from the end of the Civil War to World War I, with attention to such authors as Dickinson, Clemens, Howell, James, Wharton, Crane, Norris, Dreiser, Chopin and Chesnut.

ENGL 374. U.S. Literature: Modernism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the most important writings between World War I and World War II, with attention to such authors as Anderson, Frost, Eliot, Stein, Glasgow, Fitzgerald, Wright, Cather, Hemingway, O'Neill, Hurston, Toomer and Faulkner.

ENGL 375. U.S. Literature After 1945. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of American writings since the end of World War II, with attention to such authors as Albee, Baldwin, Carver, Coover, Ellison, Erdrich, Ginsberg, Lowell, Morrison, Plath, Pynchon, Salinger and Walker.

ENGL 377. 19th-century U.S. Novels and Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups in the United States.

ENGL 378. 20th-century U.S. Novels and Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of the United States.

ENGL 379. African-American Literature: Beginnings Through the Harlem Renaissance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of the culture and literature of African Americans from their roots in Africa and the African Diaspora to the Harlem Renaissance. Authors may include Wheatley, Douglass, DuBois, Hurston, Hughes and Cullen. Crosslisted as: AFAM 379.

ENGL 380. Southern Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the literature of the South with attention to writers such as Byrd, Poe, Chopin, Faulkner, Welty, Wolfe, O'Connor, Walker and Percy.

ENGL 381. Multiethnic Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the literature and culture of multiethnic writers in the United States. May include Native American, Latino/a, African-American, Asian-American and/or Jewish-American authors.

ENGL 382. African-American Literature: Realism to the Present. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of the culture and literature of African-Americans from the Harlem Renaissance to the present day. Authors may include Wright, Ellison, Hayden, Brooks, Walker and Morrison. Crosslisted as: AFAM 382.

ENGL 383. Short Fiction: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of short fiction. Topics will vary by section.

ENGL 385. Fiction into Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the translation of literature into film. Topical approaches vary from semester to semester. Consideration is given to the literature in its original form and to the methods of translating it into film.

ENGL 386. Children's Literature I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales and poetry, as well as a survey of the history of children's literature. Crosslisted as: TEDU 386.

ENGL 388. Professional, Scientific and Technical Writing. 3 Hours.

Semester course; 3 lecture/workshop hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Focuses on technical writing and design practices of clear, effective communication in for-profit and/or not-for-profit organizations. Working collaboratively to research and assess field-specific problems, students will produce proposals and reports common to business, science, technology and consumer industries and/or governmental, civic and arts-related organizations.

ENGL 389. The Teaching of Writing Skills. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation and topic construction. Includes extensive journal and essay writing. Crosslisted as: TEDU 389.

ENGL 390. Introduction to Linguistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. Crosslisted as: LING 390/ANTH 390.

ENGL 391. Topics in Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum of 12 credits in all topics courses at the upper level. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An in-depth study of a literary genre, an aesthetic or cultural theme in literature, or of a major writer in English or American literature. See the Schedule of Classes for specific topics to be offered each semester.

ENGL 392. Language, Culture and Cognition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/FRLG 328/LING 392.

ENGL 393. Rhetoric in Public Life. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Examines how rhetoric, the art of discovering the available means of persuasion, is indispensable for constructing public life. Teaches students how to become stewards of public life by (a) analyzing rhetorical strategies, logical fallacies, and the tropes, schemes and figures of speech found in journalism about contemporary social issues and (b) using rhetoric to develop common sense about divisive social issues.

ENGL 394. Topics in Professional Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 304, ENGL 310 or ENGL 388. May be repeated for a total of six credits with different topics. (Students may complete a maximum of 12 credits in all topics courses at the upper level.) An in-depth study of the writing practices of a particular for-profit or not-for-profit institution. See the Schedule of Classes for specific topics to be offered each semester. This is not a creative writing course.

ENGL 401. Shakespeare. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Advanced study of Shakespeare's works. May focus on a specific genre (tragedies, comedies, romances, histories, lyrics, narrative poems) or period of Shakespeare's career.

ENGL 402. Chaucer. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of "The Canterbury Tales," with some attention to the early works.

ENGL 403. Milton. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of shorter poems, selected prose, "Paradise Lost" and "Samson Agonistes".

ENGL 407. Medieval Epic and Romance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). A study of the vernacular epic and romance in England and on the continent prior to 1500.

ENGL 410. Medieval Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Studies in the English language and literature of the Middle Ages in its cultural context.

ENGL 411. Early Modern Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Studies in the language, literature and culture of early modern Britain, ca. 1500 to 1700.

ENGL 412. 18th-century Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Studies in the literature, language and culture of the 18th century in Britain and/or the United States.

ENGL 413. 19th-century Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Studies in the literature, language and culture of the 19th century in Britain and/or the United States.

ENGL 414. 20th-century Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Studies in the literature, language and culture of the 20th century in Britain, the United States and/or elsewhere in the Anglophone world.

ENGL 415. Topics in Book History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. May be repeated with different topics for a maximum of six credits. Studies in the social, cultural and material histories of the book. Depending on the instructor, this course may offer a wide historical survey of book forms, whether manuscript, print or digital; or it may address a particular kind of book within a specific historical period and/or geographic location. Topics will vary by section.

ENGL 416. Topics in Authorship. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Depending on the instructor, this course may study the concept of authorship within a specific time period or culture; or it may trace the genesis, development and/or function of authorship more broadly. Topics will vary by section.

ENGL 433. Advanced Dramatic Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 303. A practical approach to the creation of original scripts for theatre or film. Crosslisted as: THEA 426.

ENGL 435. Advanced Poetry Writing. 3 Hours.

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 305. Study of the craft of writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of quality work and to become proficient in critical analysis in order to evaluate and articulate the strength of their own poetry. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENGL 437. Advanced Fiction Writing. 3 Hours.

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 307. Study the craft of fiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate and articulate the strength of their own work. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENGL 439. Advanced Creative Nonfiction Writing. 3 Hours.

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 309. Advanced study of the craft of creative nonfiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of writing or a portion of a book-length work of nonfiction, and to become proficient in the critical analysis of literary nonfiction in order to evaluate and articulate the strength of their own work.

ENGL 441. Literary Technique: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 305, ENGL 307 or ENGL 309. Enrollment requires permission of the instructor. A scholarly and creative hybrid course that focuses on particular authors, literary forms or elements of technique. Combines specialized analysis of literary practices with creative writing in response to selected authors, forms or elements of technique. Topics will vary by section.

ENGL 445. Form and Theory of Poetry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the poetics, including prosody, with attention to the nature and functioning of language in poetry (especially metaphor), the development of poetic genres and the process by which poems are created and come to have meaning.

ENGL 447. Form and Theory of Fiction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of narration in verbal and other media, with attention to the nature, organization and functioning of language in narrative, the development of narrative genres, and the process by which narratives are created and come to have meaning.

ENGL 449. Form and Theory of Creative Nonfiction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An examination of one or more types of creative nonfiction. These may include magazine articles, research-based reportage, New Journalism, memoir, biography, autobiography, the meditative essay, the personal essay and others. May also include creative writing in the genre.

ENGL 450. Modern Grammar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Study of modern English grammar and usage with some attention to linguistic theory. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: LING 450.

ENGL 451. History of the English Language. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. The historical development of the English language; etymology, morphology, orthography and semantics. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: LING 451.

ENGL 452. Language and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of relationships between gender and language focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: LING 452/ GSWS 452.

ENGL 453. Modern Rhetoric. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of a broad range of modern rhetorical theories, emphasizing their possible relationships with linguistics, literary criticism, civic engagement and the process of writing. Crosslisted as: LING 453.

ENGL 454. Cross-cultural Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: INTL 454/ANTH 450.

ENGL 459. Political Rhetoric in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of the public rhetoric that shapes beliefs and influences behavior in the U.S. in relation to pressing social issues, emphasizing the links between rhetorical theory, criticism, civic engagement and the process of writing.

ENGL 460. Gender, Sexuality and HIV In African Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: GSWS 201 or UNIV 200. Analyzes representations of HIV/AIDS in literature in English from Eastern and Southern Africa. Pays particular attention to how authors depict the anxieties and conflicts provoked by HIV/AIDS around gender, sexualities, racism, modernity, global inequities and urbanization. Features fiction, autobiographies, poetry and short stories that challenge stigmatization, commemorate the lives lost and demand that readers both bear witness and respond to the narratives. Crosslisted as: GSWS 460.

ENGL 461. HIV, Memory and Queer Archives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: GSWS 201 or UNIV 200. Explores some of the complexities of HIV/AIDS archives and the counter-histories that they attempt to preserve, produce and disseminate. Further analyzes works that represent themselves as metaphor and medium of the archive and that address some of the central contradictions of HIV/AIDS archives and their processes. Crosslisted as: GSWS 461.

ENGL 480. Authors: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An advanced study of a specific author's texts and contexts. Taught in a seminar format with an emphasis on research.

ENGL 481. Genres: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An advanced study of a single genre, either over time or at a particular historical moment. Taught in a seminar format with an emphasis on research.

ENGL 482. Literary Topics: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An in-depth study of an aesthetic or cultural theme in literature. Taught in a seminar format with an emphasis on research.

ENGL 483. Literary Texts and Contexts: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An advanced study of a select group of literary texts with emphasis on the culture and historical moment in which they were produced. Taught in a seminar format with an emphasis on research.

ENGL 484. Literary Movements: ____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An advanced study of a group of writers whose work shares a common subject matter, writing style or philosophy. These may be defined by members of the movement (e.g., the Beats) or by critics in retrospect (e.g., the Metaphysical Poets). Taught in a seminar format with an emphasis on research.

ENGL 485. Literary Theory and Criticism: ____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An advanced study of a single theoretical and critical methodology, or a small cluster of them, as well as of their application to a variety of literary texts. Taught in a seminar format.

ENGL 487. Scholarly Editing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the theory, methodology and practice of scholarly editing. Students are trained to produce and evaluate both documentary editions, in which an editor works with a single document, and critical editions, in which the editor works with multiple texts of the same work. In addition, students are trained in the practice of editing secondary material.

ENGL 489. Literary Editing and Publishing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the art and business of commercial editing and publishing. Provides a review of current literary publishers (book, magazine and e-pubs) and exposes students to the editorial process via editing assignments, field research of literary publishers, and contemporary publishing operations and issues.

ENGL 491. Topics in Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum of 12 credits in all topics courses at the upper level. Prerequisites: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Intensive study and practice of writing in a specific genre or application. See the Schedule of Classes for specific topics to be offered each semester.

ENGL 492. Independent Study. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester. Student may take no more than 9 hours total. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. This course is designed for students who wish to do extensive reading and writing in a subject not duplicated by any English course in this bulletin.

ENGL 493. English Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Enrollment is restricted to students with demonstrated writing ability; completion of ENGL 302, 304 or 310 is recommended. Permission and determination of credit must be established prior to registration. Students will apply research, writing and/or editing skills in an approved job in areas such as business, government, law or financial services.

ENGL 494. Blackbird Editorial Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An internship in which students gain hands-on experience in literary editing and publishing through work on the internationally recognized journal, Blackbird. Students will apply writing or editing skills for the online literary magazine, Blackbird. This opportunity is open to students with demonstrated writing ability; completion of ENGL 304, 310, 388, 395, 489 or 491 is recommended. An application is required, and determination of credit and permission from the department must be established prior to registration for the course. No more than six credits in ENGL 494, ENGL 495 and/or ENGL 496 may be counted toward the degree.

ENGL 495. Social Media Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An internship in which students gain hands-on experience in writing for social media. Students will apply writing skills for organizations inside or outside the university. This opportunity is open to students with demonstrated writing ability; completion of ENGL 304, 310, 388 or 491 is recommended. Determination of credit and permission from the department must be established prior to registration for the course. No more than six credits in ENGL 494, ENGL 495 and/or ENGL 496 may be counted toward the degree.

ENGL 496. Distinguished Major Independent Study. 3 Hours.

Semester course; 3 independent study hours. 3 credits. Enrollment requires permission of the program director. Reserved for students who have been admitted to the Distinguished English Major program and may be repeated for a maximum of six credits. No more than six credits in ENGL 494, ENGL 495 and/or ENGL 496 may be counted toward the degree.

ENGL 499. Senior Seminar in English. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 301 with a minimum grade of C. Restricted to seniors in English with at least 85 credit hours taken toward the degree. A study of a specific topic, author, movement or genre in a seminar format. Students will produce an extended, documented essay as a seminar paper. See the Schedule of Classes for specific topics to be offered each semester.

European Cultures (EUCU)**EUCU 307. Aspects of German Culture.** 3 Hours.

Semester course; 3 lecture hours. 3 credits. A broad interdisciplinary approach to an understanding of German culture, language and literature. Lectures in English by guest speakers and/or use of films as required. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

EUCU 311. Classical Mythology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The basic myths of the Greek and Roman heritage. Their impact in culture then and now; from the origins of Greek myth to the superstitions of the late Roman and early Christian world.

Foreign Languages (FRLG)

FRLG 100. Basic Language and Cultural Awareness Abroad: ____ 1 Hour.

Semester course. 1 lecture hour. 1 credit. Introduces basic language skills and cultural customs and expectations to students of all disciplines planning foreign travel to a specific location. Students will learn useful vocabulary and phrases to apply in many different travel situations. Predominant focus will be placed on the culture of the specific region and include foundational communication skills. This course cannot be used to fulfill foreign language requirements for major, minor, collateral or General Education purposes. See Schedule of Classes for specific languages being taught each semester. Graded as pass/fail.

FRLG 101. Foreign Languages: ____ 4 Hours.

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FRLG 101 to enroll in FRLG 102. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

FRLG 102. Foreign Languages: ____ 4 Hours.

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FRLG 101 to enroll in FRLG 102. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

FRLG 201. Foreign Languages: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 102. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills. Course may be repeated with different languages.

FRLG 202. Foreign Languages: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 201. Designed to increase the student's proficiency through the study of selected cultural and literary texts. Course may be repeated with different languages.

FRLG 204. Language and Groups in the United States. 3,4 Hours.

Semester course; 3-4 lecture hours. 3-4 credits. Taught in English. This course introduces students to the sociocultural experience and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural and social issues through fiction and nonfiction texts, films and multimedia pertaining to specific language groups, such as: Latinos, Italian-Americans, German-Americans or Native Americans. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: INTL 204.

FRLG 328. Language, Culture and Cognition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/ENGL 392/LING 392.

FRLG 345. Great Cities of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: INTL 345/URSP 350.

FRLG 493. World Languages Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major concentration. Prerequisites: prior completion of 9 credits in the respective foreign language at the 300 level, with a course in advanced grammar and composition, one in conversation and one in civilization. Designed for the advanced student to gain workplace experience in the target foreign language in internationally oriented public and private organizations and agencies. All course work must be completed in the target language.

Foreign Literature in English Translation (FLET)

FLET 321. Early German Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Changing perspectives in German literature from its pagan beginnings, through the Medieval Golden Age, Baroque extremism, the Enlightenment and Storm and Stress up to Classicism and Goethe's Faust. Treatment of The Nibelungenlied, the courtly epic, *Simplicissimus*, and selections by Lessing, Schiller and Goethe. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

FLET 322. Modern German Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Growing psychological awareness and alienation of the individual in German literature of the 19th and 20th centuries. Representative works chosen from among writers of the past century and such modern writers as Thomas Mann, Kafka, Hesse, Brecht, Kafka, Hesse, Brecht, Boll and Grass. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

FLET 391. Topics in Foreign Literature in English Translation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth study of selected topics in foreign literature. This course will not satisfy foreign language requirements. No knowledge of a foreign language is required. All work is done in English.

FLET 492. Independent Study. 1-3 Hours.

Semester course; 1, 2 or 3 credits. Maximum of 3 credits per semester, maximum total of 6 credits for all FLET independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 hours in any literature course. Determination of course content and permission of the instructor and department chair must be obtained prior to registration of the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest and for which they have the necessary background.

Forensic Science (FRSC)

FRSC 202. Crime and Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces the scientific theory, concepts and practices used in any physical science by relating them to the analysis of physical evidence performed in forensic laboratories and the fundamentals of crime scene investigation, and their relationship to the criminal justice system and criminal investigations. Not applicable for credit toward the B.S. in Forensic Science.

FRSC 291. Topics in Forensic Science. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of six credits. A study of selected topics in forensic science. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

FRSC 300. Survey of Forensic Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOZ 151, CHEM 102, CHEZ 102 and UNIV 112, each with a minimum grade of C. Pre- or corequisites: CHEM 301 and CHEZ 301, and UNIV 200 or HONR 200. Enrollment is restricted to forensic science majors or by permission of instructor. Introduces the theory, concepts and practices used in the analysis of physical evidence performed in crime laboratories, and the fundamentals of crime scene investigation. Also introduces ethical and quality assurance issues of crucial importance in modern crime laboratories.

FRSC 309. Scientific Crime Scene Investigation. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CHEM 301 and FRSC 300, each with a minimum grade of C. Enrollment is restricted to forensic science majors or by permission of the instructor. Provides scientific theory of crime scene investigation and crime scene reconstruction and basic knowledge of proper crime scene protocol and evidence processing techniques. Includes the processes for documentation, collecting and preserving physical evidence.

FRSC 310. Forensic Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210 or FRSC 300 with a minimum grade of C. A comprehensive overview of forensic anthropology including its development and the theory and methodology on which it is based. Crosslisted as: ANTH 310.

FRSC 325. Forensic Medicine. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FRSC 300, CHEM 301 and CHEZ 301, each with a minimum grade of C. Enrollment restricted to forensic science majors or by permission of instructor. An investigation of topics in death scene investigations as well as autopsy findings associated with natural and unnatural deaths.

FRSC 351. Forensic Science Service-learning. 2 Hours.

Semester course; 2 lecture hours. 2 credits. May be repeated for a maximum of 4 credits. Prerequisites: FRSC 300 and at least one additional FRSC/Z course, each with a minimum grade of C. Enrollment restricted to forensic science majors or by permission of instructor. Provides an opportunity to learn about the community's schools and how to teach forensic science concepts to school-aged students. Each week, VCU students will provide hands-on lab activities in community-based programs to reinforce lessons learned through their school curricula. Reflective writing, partner assignments and a final presentation are required, in addition to 20 community partner hours. VCU students will improve their ability to explain forensic concepts to those with differing scientific backgrounds, have increased confidence when addressing audiences and deepen their understanding of civic responsibility.

FRSC 365. Forensic Microscopy. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CHEM 301 and FRSC 300, each with a minimum grade of C. An in-depth course in the theory and practical application of microscopy to the examination, identification and individualization of physical evidence submitted to forensic laboratories.

FRSC 375. Forensic Evidence, Law and Criminal Procedure. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or co-requisites: FRSC 300 or FRSC 350. Open only to forensic science majors or by permission of instructor. The law of criminal procedure and rules of evidence as applied to forensic science. Topics will include scientific versus legal burdens of proof, legal terminology and trial procedure.

FRSC 385. Forensic Serology. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CHEM 301 and either FRSC 300 or FRSC 350, each with a minimum grade of C. Examines the application of basic chemical, biological, immunological and microscopic laboratory techniques to the examination and identification of body-fluid stains, including both presumptive and/or confirmatory identification of blood, semen, saliva, urine and feces. Applies methods that are used in forensic laboratories to identify the species of origin and includes a review of advanced methods for automated serological analysis. Laboratory exercises will supplement lectures to give students practical knowledge of the laboratory procedures.

FRSC 391. Topics in Forensic Science. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Maximum total of 6 credits for all forensic science topics courses may be applied to the major. Prerequisites: CHEM 301 and either FRSC 300 or FRSC 350, each with a minimum grade of C. A study in selected topics in forensic science. See the Schedule of Classes for specific topics to be offered each semester and additional prerequisites.

FRSC 400. Forensic Chemistry. 4 Hours.

Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisites: CHEM 409 and CHEZ 409, each with a minimum grade of C. Examines core principles and instrumentation used in forensic chemistry applications to include microchemical tests, gas chromatography, liquid chromatography, spectroscopy and mass spectrometry, with emphasis on forensic casework. These topics may include accelerants, explosives, paints, polymers and drug analysis. Students will gain experience in experimental design, operation and troubleshooting of instrumentation, as well as the analysis and interpretation of chromatographic and spectroscopic data sets.

FRSC 410. Forensic Pattern Evidence. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: FRSC 309 with a minimum grade of C. Enrollment is restricted to forensic science majors or by permission of the instructor. Covers topics in pattern evidence analysis including analysis of latent prints and impression evidence of footwear and tire treadmarks as applied to forensic casework. Covers both the theoretical and practical aspects using lectures and laboratory exercises focusing on the visualization, examination and interpretation of pattern evidence.

FRSC 412. Forensic Analysis of Firearms and Toolmarks. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: FRSC 365 with a minimum grade of C. Enrollment is restricted to forensic science majors or by permission of the instructor. An investigation of topics in firearms and toolmark examination for forensic applications. Covers both theoretical and practical aspects using lectures and laboratory exercises.

FRSC 438. Forensic Molecular Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 310 with a minimum grade of C. Provides an understanding of molecular biology testing methodologies as applied to analysis of forensic samples. Current topics in forensic DNA analysis will include quality assurance, DNA databanking, contemporary research and population genetics. Crosslisted as: BIOL 438.

FRSC 445. Forensic Toxicology and Drugs. 4 Hours.

Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisites: CHEM 301, CHEM 302, CHEZ 301 and CHEZ 302, each with a minimum grade of C. Provides a comprehensive overview of the basic principles of drug analysis and forensic toxicology. Students will perform hands-on lab exercises in these areas. Students will learn to identify the controlled substances and toxic agents most commonly abused and/or encountered in criminal investigations, including issues of interpretation and impairment.

FRSC 490. Professional Practices in Forensic Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301; FRSC 300 or FRSC 350; and one additional forensic science course, each with a minimum grade of C. Enrollment restricted to seniors in forensic science with at least 85 credit hours toward the degree. An examination and evaluation of historical and current issues in the scientific analysis of physical evidence in criminal investigations. Individual and group activities relating to professional practices (ethics, quality control and testimony) of forensic scientists.

FRSC 492. Forensic Science Independent Study. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. May be repeated for a maximum of six credits. Prerequisites: CHEM 301 and FRSC 300, each with a minimum grade of C. Enrollment is restricted to forensic science majors with at least sophomore standing and a minimum GPA of 2.5. Independent studies must be research-based. A determination of the amount of credit and the written permission of both the instructor and the program director must be procured prior to registration for the course.

FRSC 493. Forensic Science Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. Prerequisite: FRSC 300 with a minimum grade of C. Enrollment is restricted to forensic science majors with a minimum GPA of 2.75. An application is required in advance of admission with permission of the internship coordinator. Through placement in an approved organization, the student will obtain a broader, more practical knowledge of forensic science and its applications. Written progress and final reports are required. Graded as pass/fail.

Forensic Science Lab (FRSZ)**FRSZ 391. Topics in Forensic Science Laboratory. 1-3 Hours.**

Semester course; variable laboratory hours. 1-3 credits. Maximum total of 6 credits for all forensic science topics courses may be applied to the major. Prerequisite: FRSC 300 or 350. Laboratory investigations in a selected topic in forensic science. See the Schedule of Classes for specific topics to be offered each semester and additional prerequisites.

FRSZ 438. Forensic Molecular Biology Laboratory. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL/FRSC 438. Provides comprehensive coverage of the various types of DNA testing currently used in forensic science laboratories. Students will have hands-on experience with the analytical equipment employed in forensic science laboratories and the techniques for human identification in forensic casework. Students also will explore and practice both scientific writing and writing of DNA case reports. Crosslisted as: BIOZ 438.

French (FREN)**FREN 101. Beginning French I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to French to take the placement test to determine eligibility. For students with no prior knowledge of French. Beginning grammar, reading, writing and oral skills.

FREN 102. Beginning French II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

FREN 110. Intensive French I. 8 Hours.

Semester course; 10 lecture and laboratory hours. 8 credits. This intensive course combines FREN 101 and 102 into a single semester.

FREN 201. Intermediate French I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in French. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

FREN 202. Intermediate French II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in French. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

FREN 205. Intermediate Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

FREN 210. Intensive French II. 6 Hours.

Semester course; 6 lecture and laboratory hours per week. 6 credits. Prerequisites: FREN 101 and 102, or FREN 110. This intensive course combines FREN 201 and 202/205 into a single semester.

FREN 295. Gateway to the French Major/Minor. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or permission of instructor. Non-foreign language majors who wish to take one or two upper-level classes only need to complete FREN 202, 205 or equivalent. This course is composed of three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of texts; 2) improving students' oral communication; 3) listening skills: extensive use of recorded material and Language Learning Center resources to improve and enhance listening skills in a variety of authentic contexts.

FREN 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, FREN 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in French. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

FREN 301. Self and Society: Effective Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, FREN 205 or FREN 300. Conducted in French. Students advance their knowledge of the French language and French-speaking cultures while developing their reading and writing skills. Students examine a variety of texts and media and gain strategies for interpretation and discussion, with a focus on effective writing.

FREN 305. Oral Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, FREN 205, FREN 300 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in French. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

FREN 307. French Conversation and Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. The course is designed to develop the student's conversational skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected French films. Emphasis is also placed on vocabulary development and writing practice.

FREN 320. French Civilization and Culture I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. A survey of French civilization and culture from its origins to the French Revolution. Introduction to and analysis of the most important aspects of Gallo-Roman society and of the Merovingian, Carolingian and Capetian dynasties which influenced the institutions of the Ancien Regime and still serve as cultural archetypes and icons in contemporary French culture.

FREN 321. French Civilization and Culture II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. A survey of French civilization and culture from the Napoleonic era to the present. This course retraces important cultural and social traditions found during the first Empire, the Restoration, the Second Republic, the Second Empire, the Commune, the Third and Fourth Republics which influenced and continue to shape contemporary French civilization and culture of the Fifth Republic.

FREN 330. Survey of Literature. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. First semester: through the 18th century. Second semester: 19th and 20th centuries.

FREN 331. Survey of Literature. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. First semester: through the 18th century. Second semester: 19th and 20th centuries.

FREN 410. Explication de Textes. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. This course provides an introduction to terms encountered in text analysis: prosody, versification, rhetorical language, narratology and genres. It presents traditional and current schools of literary criticism and applies them to an interdisciplinary selection of texts. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 420. French Regional Culture. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Focuses on the culture and civilization specific to each of France's 22 regions. History, culture, architecture as well as sociopolitical, linguistic identities, artisanal trades and folklore are presented for each region. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 421. French Contemporary Culture. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Focuses on the contemporary culture found in French society. The individuals and events shaping current French social, political, artistic and cultural life are examined. Each theme is illustrated by current audiovisual materials. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 422. French Cinema. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Tracing French cinema from les Frores Lumiere and Georges Melius through the New Wave to new contemporary directors, this course focuses on the thematic selections and stylistic techniques particular to French cinematographic culture. The class is offered concurrently with the annual VCU French Film Festival, thereby permitting students to directly communicate with French actors and directors participating in the festival. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 425. French Media. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Analysis of the French media: written press, radio and television. Advanced comprehension skills required and stressed through regular exercises pertaining to different journalistic discourses and styles. Proficiency in journalistic writing is developed in class through the creation of an electronic French newspaper on the Internet. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 426. Pop France. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 321 or 331. Conducted in French. Explores contemporary French popular culture, put in a wider historical context. Discusses mainstream media, new media, commercial cinema, comic strips, pulp fiction and food, while devoting several weeks to music. Investigates the complex sociolinguistics of argot (slang), with a special interest in the banlieues' (suburbs) multicultural subculture and multifaceted codes. Also questions the possibility of a "pop philosophy" in French thought.

FREN 428. Earth Ahead: Contributions by French Authors, Artists and Activists. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FREN 301; FREN 305 or FREN 307; and FREN 320, FREN 321, FREN 330 or FREN 331. Conducted in French. Explores the theme of the earth, nature, and the environment in the philosophy, literature and art of contemporary Francophone cultures, and the extent to which these intellectual and cultural contributions have entered academic and popular discussions in 21st-century France and elsewhere in the world. Analyzes how these diverse manifestations of environmental discourse inform, shape and articulate Francophone cultural praxes of activism concerned with defending our natural world.

FREN 430. Great Poets and Their Times. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. Poetry of select major poets of a select century or centuries within a context of the historical, artistic and broad cultural setting of the poets' times. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 431. The 16th Century. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of works representative of literary schools, genres and major works of the period: Rabelais, the Pleiade, Molière and the Baroque poets. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 432. The 17th Century. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: Baroque and Classical readings including prose, poetry and drama of the authors of the reign of Louis XIV; Pascal, La Rochefoucauld, La Bruyère, Corneille, Racine and Molière. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 433. The 18th Century. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: the "philosophes" including Montesquieu, Voltaire, Diderot and Rousseau and readings from Marivaux, Provost and Vauvenargues. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 434. The 19th Century. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: Romanticism, Realism, Naturalism and Symbolism. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 435. Contemporary French Literature. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. An overview of French literature from 1900 to the present. Discusses texts that have particular resonance in relation to contemporary issues, including literary works that have contributed most saliently to French culture over this time period.

FREN 440. Commercial French. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. This course introduces students to the cultural, economic and linguistic dimensions of the Francophone commercial sector. It builds the student's reading, writing, listening and speaking proficiencies through active engagement with business-related materials and activities. See the Schedule of Classes for the specific topic to be offered each semester.

FREN 450. Francophone Literatures and Cultures. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisite: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Introduces students to the literatures and cultures of the Francophone world. Provides an overview of the Francophone world and an in-depth study of literary works written in French from Africa, the Caribbean, North America, Asia and Europe. Also explores the impact of Colonial history on Francophone literatures and cultures. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: INTL 450.

FREN 491. Topics in French. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. An in-depth study of selected topics in French. See the Schedule of Classes for specific topics to be offered each semester.

FREN 492. Independent Study. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses in French. Prerequisite: FREN 301; FREN 320 or 321; Senior standing with a minimum of 85 credits earned toward the degree. Determination of course content and permission of the instructor must be obtained prior to registration of the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

Gender, Sexuality and Women's Studies (GSWS)**GSWS 201. Introduction to Gender, Sexuality and Women's Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary and intersectional introduction to the perspectives and core concerns pertaining to gender, sexuality and women's studies.

GSWS 202. Introduction to Trans Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the field of transgender studies. Introduces students to trans identities, communities and politics and explores the historical and contemporary production of gender norms and the institutions and mechanisms that police those norms.

GSWS 205. Introduction to LGBT+ and Queer Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Stresses intersectional approaches to LGBT+ and queer studies. Introduces students to a broad field of study across disciplines, cultures and historical periods.

GSWS 236. Women in Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature by and/or about women. Crosslisted as: ENGL 236.

GSWS 291. Topics in Women's Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a total of 6 credits. An in-depth examination of specialized areas of interest in women's studies. See the Schedule of Classes for specific topics to be offered each semester.

GSWS 301. Feminist Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: UNIV 200 or HONR 200. This course will introduce students to areas of generative struggle and critique within feminist theory. Will examine these conflicts not as moments of danger, but as constituting a key genealogy of feminism. Will be structured around important debates that constitute this genealogy of feminist theory, including: early woman of color critiques of the notion of "universal sisterhood," debates over the "proper object" of feminist inquiry, post-structuralist approaches to theorizing the subject, queer theory's shift toward a "subject-less critique" and transnational feminist praxis.

GSWS 302. Trans Theory and Activism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GSWS 202. Examines the production and policing of gender norms, both historically and in the contemporary moment. Offers students the opportunity to delve more deeply into the field of trans studies, reading key new works in the field and developing their own substantive research projects.

GSWS 304. Sociology of Families. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: ANTH 304/SOCY 304.

GSWS 305. African American Family in Social Context. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: AFAM 305/SOCY 305.

GSWS 309. Gender and Global Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how health policies produce and regulate gendered bodies and sexualities. Topics may include how colonial medicine and health policies of detection, diagnosis, surveillance, quarantine and confinement were implemented as methods of social control. Analyzes continuities between colonial medicine and more contemporary interventions that in the name of individual and communal health attempt to shape proper sexualities and gendering. Crosslisted as: AFAM 309/ANTH 309/INTL 309.

GSWS 316. Women and the Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights of women of color and lesbians, reproductive rights, women criminals and women in the legal profession. Crosslisted as: POLI 316.

GSWS 318. Politics of Race, Class and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: AFAM 318/POLI 318.

GSWS 319. Women and American Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course analyzes the participation of women in American politics. Attention is given to both women's historical and contemporary roles in politics, their participation as voters and citizens, and their behavior as candidates and office holders. Additional topics may include workplace, family and education issues and reproductive rights. Crosslisted as: POLI 319.

GSWS 333. Gender in Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Explores different theoretical approaches to gender and its intersections with other sources of inequality, including sexuality, race, class and age. Possible topics include masculinities, gender and the body, and how gender operates in various institutional settings, such as the economy and the family. Crosslisted as: SOCY 333.

GSWS 334. Sociology of Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized. Crosslisted as: SOCY 334.

GSWS 335. Psychology of Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse. Crosslisted as: PSYC 335.

GSWS 336. Violence Against Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or GSWS 201. An examination of violence against women from a global and local perspective with a primary focus on violence perpetrated against women in the U.S. Requires a minimum of 20 hours of community service. Crosslisted as: SOCY 336.

GSWS 339. History of Gender and Sexuality in Europe I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from c. 500 BCE through industrialization. Explores the notions of femininity and masculinity as they were expressed in the economics, family structures and intellectual and religious discourse within and amid Greek, Hellenistic, Roman, Germanic and Norse, and medieval Latin Christian cultures, and traces the changes brought to the medieval cultural synthesis by European colonial expansion, the reformations and the Industrial Revolution. Crosslisted as: HIST 330.

GSWS 340. History of Gender and Sexuality in Europe II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of gender and sexuality in Europe since industrialization. The course offers a particular focus on the lives of European women, as well as sexual and gender minorities who by the end of the 20th century would identify as LGBTQ+. Topics will include the development of European feminisms, treatment of gender and sexuality under fascism, and the sexual revolution. Crosslisted as: HIST 331.

GSWS 341. History of Gender and Sexuality in America I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from the first colonial settlements through the Civil War. Explores the changing relation of femininity and masculinity to families, economics, politics, religions, race and culture for the wide variety of peoples who inhabited, immigrated to or were forced to migrate to America and the subsequent United States. Crosslisted as: HIST 365.

GSWS 342. History of Gender and Sexuality in America II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from Reconstruction to the present. Examines the relationship between gender, race, ethnicity and class within American society and the struggles for suffrage, social reform, employment opportunities and sexual freedom in the modern United States. Crosslisted as: HIST 366.

GSWS 352. Feminist Literary Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. The study of contemporary feminist thought and feminist approaches to analyzing literature and culture. This course examines the history and development of feminist theory as a methodology in the humanities, explores several of the major theoretical trends of the past 30 years and examines applications of feminist theory to specific works of literature. Crosslisted as: ENGL 352.

GSWS 353. Women's Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit once (for a maximum of six credits) when a different group of writers is studied. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of selected literature written by woman-identified writers. Crosslisted as: ENGL 353.

GSWS 354. Queer Literature: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of queer literature. Considers issues of history, theory, aesthetics, politics, authorship and/or interpretive communities and examines the intersection of social identities with particular attention to race/ethnicity, sex, sexual orientation, gender expression, class and/or nationality. Topics will vary by section. Crosslisted as: ENGL 354.

GSWS 355. Queer Cinema. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Theoretical focus on cinematic works about and/or by those identifying as lesbian, gay, bisexual, transgender or queer. Examines concepts of gender, sexuality and women's studies through analysis of selected works in the medium of film as well as engages with theoretical texts in the field.

GSWS 356. Open Minds. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Experiential seminar held at a local correctional institution that connects students to inmates as learning partners. Examines the history and development of American prisons in context, supplementing theoretical studies with the lived experiences of inmates.

GSWS 358. Sex and Power. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre-or corequisite: GSWS 201. Challenges the taken-for-granted beliefs about the naturalness of sexuality and, instead, considers the relationship between and among individual sexualities, sexual (sub)cultures, institutions and politics. Links the contemporary context for sexual lives, experiences and feelings with the history of sexuality in the United States, focusing on how sex and power interact. Covers a wide range of topics, including but not limited to sexual identities (e.g. LGBTQA+ and plurisexualities); racism, White Supremacy and desirability; abortion, birth control, reproduction and sterilization; relationships, intimacies and kinship (including non-monogamies); commercial sex, pornography, prostitution and sex work; sexual health and "disease"; and sexual exploitation and violence.

GSWS 359. Black Women Writers. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Explores the variety of ways African-diasporan women and woman-identified writers gained self-expression in the midst of gender and race oppression from slavery to the present. Also explores the rise of Black feminist discourse as a project of reclaiming and giving voice to writers who had previously been silenced or suppressed. Crosslisted as: ENGL 355.

GSWS 360. Mujerista Ethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or co-requisite: GSWS 201. Introduces students to the study of ethics from a "mujerista" feminist perspective. Focuses on decolonial philosophies from Latin American and Latinx perspective as centered on community and from the organizational perspectives of women in the Latin American and Latinx community. Emphasizes the inherent connections between liberation theory and political action that have inspired decolonial thought.

GSWS 366. Women and Global Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: POLI 366/INTL 368.

GSWS 369. Global LGBTQ+ History Since 1750. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Investigates sexual and gender non-normativity in global perspective since 1750. The course emphasizes colonialism and global interconnectivity, and the way they have shaped identities and experiences of same-sex desiring and gender nonconforming individuals. Crosslisted as: HIST 369.

GSWS 371. Women in Islam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200, RELS 108, GSWS 201 or ENGL 215. Critical study of the roles and rights of women in Islam. Crosslisted as: RELS 371.

GSWS 372. Global Women's Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: RELS 372/INTL 372.

GSWS 373. Gender and the Bible. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 108 or GSWS 201 or RELS 301 or RELS 302; and ENGL 215 or UNIV 200 or HONR 200. Studies the Hebrew and Christian scriptures with emphasis on gender. Attention to traditional, feminist, womanist and postcolonial interpretation. Crosslisted as: RELS 373.

GSWS 380. Lesbian and Bisexual Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course examines the lives of contemporary lesbian and bisexual women from psychological, sociological, developmental, political and cultural perspectives. The intersection of race, class, ethnicity, religion, age, disability and locale with lesbian/bisexual identity will be explored.

GSWS 382. Gender, Crime and Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the role of gender as it relates to crime and justice. Special attention will focus on the gendered experiences of practitioners, offenders and victims within the criminal justice system in terms of processing, adjudication and institutional responses. Crosslisted as: CRJS 382.

GSWS 383. Beyoncé: Music, Race and Fame. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the popular music industry, the celebrity industry, Black Twitter, divas and the racial politics of beauty to offer a critical context for Beyoncé, divadom and Black female performance.

GSWS 384. Queer Nightlife. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the boundaries between nightlife, queer worldmaking and subcultural media. Explores queer nightlife as a space where transgressive performances of the self are made possible via music, media, fashion and performance. Through close readings and sustained cultural analysis, students acquire a critical understanding of the potentialities of queer "after hours" in the making of subcultural identity and emerging aesthetic practices.

GSWS 390. Forced and Coerced Labor in Africa and the Americas. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines a broad range of forced and coerced labor in Africa and selected parts of the Americas, including the United States, Canada and the Caribbean, from around the 17th century to the 20th century. The role that gender and race played in slavery and coerced labor will be given particular attention. Crosslisted as: AFAM 390/HIST 380.

GSWS 391. Topics in Gender, Sexuality and Women's Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth examination of specialized areas of interest in gender, sexuality and women's studies. See the Schedule of Classes for specific topics to be offered each semester.

GSWS 392. Gender and Health Across the Life Span. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Uses a gendered perspective to critically examine the inequity in access to health care and differential treatment by health care researchers and service providers. Places the issues of gender in their historical and geographical context by reading critical texts and authors in the field of gender, sexuality and women's studies, alongside historical accounts and current social science texts at the intersection of gender and health.

GSWS 393. Topics in Feminist Method: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how knowledge and power intersect, how gender theory and feminist politics influence research, how the knower influences knowledge production and how social location shapes inquiry. Designed to enhance the skills of students in applied research. With direct supervision by the instructor, individuals or small groups of students will address themselves to the tasks of defining, designing and engaging research projects.

GSWS 401. Topical Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: 21 credits in gender, sexuality and women's studies or permission of the instructor. Students are required to produce a senior research project on a topic related to the theme of the seminar.

GSWS 409. LGBTQ Health and Wellness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: GSWS 201; and UNIV 200 or HONR 200. Examines LGBTQ health and wellness, broadly defined. Examines core health issues, such as physical and mental health disparities, health care access, wellness practices and policy/care systems dimensions. Focuses on multiplicative marginalization and how race, ethnicity, class, gender, rurality, poverty, immigration and adolescence, among other factors, impact core health issues.

GSWS 414. Psychology of Women's Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions. Crosslisted as: PSYC 414.

GSWS 415. Black Performance Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: DANC 103, DANC 104 and UNIV 200. This course will focus on performance as apt method for analysis of notions/experiences of Blackness. Students will read scholarly texts which contend with the ubiquity of Black death and gratuitous violence alongside sonic, visual and written texts by significant cultural contributors – including works by Rihanna, Dapper Dan, Cardi B, Beyonce and Janet Mock – in order to examine and contend with expressions of complex personhood by people who exist under the constant threat of annihilation. The course focuses on embodied knowledge – that is, the harnessing of insight derived from lived experiences of hegemonic racial, gender, sexual and class subjection – and how such wisdom is transformed into strategies, tactics and tools that enable black people to acquire the human and material resources needed for survival. Crosslisted as: DANC 415.

GSWS 450. Black Feminist Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Theoretical focus on black feminist thought, spanning the first wave of feminism in the U.S. from the late-19th and early 20th century onward. Though primarily U.S.-focused, this course examines black feminist thought globally, as well as that of lesbians, transgendered or queer individuals, foregrounding topics such as race, gender, class, sexuality, activism, liberation, labor and social movements. Also examines the history and development of black feminist thought, considers it as a methodology in the humanities and social sciences, explores several of its major theoretical trends of the past 100 years and examines its applications to cultural phenomena and current events.

GSWS 451. Narratives of Asian American Sexualities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines representations of gendered Asian American sexualities in literature (novels, short stories, an autobiographical novel, poetry and a play), as well as visual texts (graphic novels, films and video). Pays particular attention to how the texts participate in and challenge the constitution of Asian American subjectivities in the contexts of (neo)colonialism, neoliberal restructuring and the emergence of pan-Asian and feminist movements in the United States.

GSWS 452. Language and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of relationships between gender and language focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 452/LING 452.

GSWS 453. Western Religions, Women and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: INTL 453/RELS 453.

GSWS 457. Women, Art and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?" Crosslisted as: ARTH 357.

GSWS 460. Gender, Sexuality and HIV In African Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: GSWS 201 or UNIV 200. Analyzes representations of HIV/AIDS in literature in English from Eastern and Southern Africa. Pays particular attention to how authors depict the anxieties and conflicts provoked by HIV/AIDS around gender, sexualities, racism, modernity, global inequities and urbanization. Features fiction, autobiographies, poetry and short stories that challenge stigmatization, commemorate the lives lost and demand that readers both bear witness and respond to the narratives. Crosslisted as: ENGL 460.

GSWS 461. HIV, Memory and Queer Archives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: GSWS 201 or UNIV 200. Explores some of the complexities of HIV/AIDS archives and the counter-histories that they attempt to preserve, produce and disseminate. Further analyzes works that represent themselves as metaphor and medium of the archive and that address some of the central contradictions of HIV/AIDS archives and their processes. Crosslisted as: ENGL 461.

GSWS 470. Latinx Feminisms. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: GSWS 201 or UNIV 200. Focuses on how the intersections of history and identity are reflected through writing, film and visual art, as expressions of Latinx feminist thinking. Will use the method of "testimonio," or testimony, as a political tool that has gathered the lived experience of politically persecuted vulnerable communities in Latin America, and continues as a method of validating lived experience, or biography as text.

GSWS 491. Topics in Women's Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a total of 12 credits. An in-depth examination of specialized areas of interest in women's studies. See the Schedule of Classes for specific topics to be offered each semester.

GSWS 492. Independent Study. 1-6 Hours.

Semester course; 1-6 lecture hours. 1-6 credits. May be repeated for a maximum of six credits per semester; maximum total of six credits in all independent study courses. Enrollment is restricted to students of junior and senior standing who have acquired a minimum of 12 credits in gender, sexuality and women's studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be obtained prior to registration for the course.

GSWS 493. Internship. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: internship credit is limited to students with a minimum grade point average of 3.0 and junior or senior status. Directed internship, local or abroad, or other approved study-abroad experience with the objective to provide real-life experience. Determination of the amount of credit (based on hours or effort required) and permission of departmental internship coordinator must be obtained prior to registration for the course. Graded pass/fail.

German (GRMN)**GRMN 101. Beginning German I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to German to take the placement test to determine eligibility. For students with no prior knowledge of German. Beginning grammar, reading, writing and oral skills.

GRMN 102. Beginning German II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

GRMN 201. Intermediate German I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in German. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

GRMN 202. Intermediate German II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in German. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

GRMN 205. Intermediate Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201. Conducted in German. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

GRMN 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in German. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

GRMN 301. Self and Society: Effective Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205, GRMN 300 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in German. Students advance their knowledge of the German language and German-speaking cultures while developing their reading and writing skills. Students examine a variety of texts and media and gain strategies for interpretation and discussion, with a focus on effective writing.

GRMN 305. Oral Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205, GRMN 300 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in German. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

GRMN 307. German Conversation and Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 recommended. Conducted in German. The course is designed to develop the student's communication skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected German films. Emphasis is also placed on vocabulary development and writing practice.

GRMN 311. German Through the Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Designed to develop language proficiency by using material available through the various media: newspapers, magazines, films, Internet, podcasts and radio broadcasts.

GRMN 314. Commercial German. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 301. Designed to develop the student's ability to use German as a means of oral and written communication in the business world. Emphasis on the acquisition of technical tools necessary for business exchanges in specialized fields.

GRMN 320. From the Vandals to Kant: Civilization and Literature I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A survey of German-speaking culture and literature from its origins to the Enlightenment. Also emphasizes enhancing German-language skills in vocabulary, reading, speaking and writing.

GRMN 321. From Faust to Nazism: Civilization and Literature II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A treatment of German culture and literature from the Age of Goethe to the rise of Nazism. Also emphasizes enhancing German language skills in vocabulary, reading, speaking and writing.

GRMN 322. From Kafka's World to the EU: Civilization and Literature III. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A survey of German culture and literature from the 1920s to today. Also emphasizes enhancing German language skills in vocabulary, reading, speaking and writing.

GRMN 420. The Turn of the Century. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Conducted in German. A course dealing with the major intellectual, philosophical, artistic and cultural trends from the turn of the century through the Weimar period as reflected in the writings of authors such as Kafka, Mann and Hesse. Includes impressionism, expressionism and neue Sachlichkeit.

GRMN 421. The Postwar German Scene. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Conducted in German. A course dealing with the political, social and intellectual developments of the German-speaking countries from the end of World War II to the present as reflected in the literary works of their major authors.

GRMN 422. German Film. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of selected topics in German film from the beginnings to today, particularly as seen in their social, historical and cultural contexts. See the Schedule of Classes for the specific topic to be offered each semester.

GRMN 423. Folk/Popular Culture. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of selected topics related to folk traditions and/or popular culture in German-speaking countries. See the Schedule of Classes for the specific topic to be offered each semester.

GRMN 424. Culture and Society. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of issues in the culture and society of German-speaking countries today. See the Schedule of Classes for the specific topic to be offered each semester.

GRMN 425. Language in Context: _____. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: GRMN 300; GRMN 301, 305, 307 or 311; and GRMN 320, 321 or 322. Conducted in German. Study of German language and linguistics. See the Schedule of Classes for the specific topic to be offered each semester.

GRMN 491. Topics in German. 1-3 Hours.

Variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. An in-depth study of selected topics in German. See the Schedule of Classes for specific topics to be offered each semester.

GRMN 492. Independent Study. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses in German. Prerequisites: GRMN 301; GRMN 320 or 321 or 322; GRMN 420 or 421 or 422 or 423 or 424 or 491; and senior standing with a minimum of 85 credits earned toward the degree. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

Health, Physical Education and Exercise Science (HPEX)

HPEX 107. Badminton. 1 Hour.

1 credit.

HPEX 121. Self Defense: Karate or Judo. 1 Hour.

1 credit.

HPEX 201. Individual Sports and Lifelong Leisure Activities. 3 Hours.

Semester course; 3 lecture/laboratory hours. 3 credits. Health, physical education and exercise science majors only. Prepares students to develop educational skills and methodology for instruction of individual sports in the classroom, gymnasium and outdoor field settings; students acquire skills needed to teach individual sports in middle and high school environments.

HPEX 202. Team Sports and Activities. 3 Hours.

Semester course; 3 lecture/laboratory hours. 3 credits. Open only to general health and physical education majors in the health, physical education and exercise science program. Students develop educational skills and methodology for instruction of team sports and group activities in classroom, gymnasium and outdoor field settings. Students acquire skills needed to teach team sports and activities in middle and high school environments.

HPEX 203. Wilderness Education I. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Designed to examine the principal philosophical foundations of adventure theory and wilderness leadership. Concepts of judgment, decision-making, leadership and environmentally correct practices are introduced.

HPEX 211. Tumbling and Elementary Rhythmics. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prepares students to work with elementary children 4 to 12 years of age in rhythmic activities; includes elementary tumbling, activities and games designed to help a child's rhythmic ability.

HPEX 216. Lifeguard Training. 1,2 Hour.

1-2 credits.

HPEX 217. Water Safety Instruction. 1,2 Hour.

1-2 credits.

HPEX 218. Scuba. 1 Hour.

1 credit.

HPEX 220. Introduction to Athletic Training. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 205 and BIOZ 205L. Corequisite: HPEZ 220L. An introduction to the field of athletic training. Includes the prevention and basic care of athletic injuries in the physically active.

HPEX 230. History and Philosophy of Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

HPEX 231. Principles of Accident Prevention. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide information on the magnitude of the accident problem in the nation. Special attention is given to concepts and theories of accident prevention, particularly as they relate to use of highways.

HPEX 232. Introduction to Driver Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A current automobile operator's permit is required. An introduction to the vehicle operator's task within the highway transportation system: driver task analysis.

HPEX 250. Medical Terminology. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Self-directed learning experience for students entering a medical or allied health profession. Presents medical terms by their root word, suffix and prefix. Develops skills to build and decode medical terms by their word parts. Develops ability to recognize and use common medical abbreviations.

HPEX 271. Safety, First Aid and CPR. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course includes American Red Cross and/or American Heart Association certification in Multimedia Standard First Aid and Basic Life Support (cardiopulmonary resuscitation). In addition, basic principles of accident causation and prevention are presented.

HPEX 291. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Restricted to health, physical education and exercise science majors only. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education and professional introduction courses; may include participatory and experimental formats dictated by the faculty supervisor; credits determined by the number of contact hours of the experience.

HPEX 292. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional core introduction courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 293. Field Practicum I. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 294. Field Practicum II. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 295. Clinical Practicum I. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 296. Clinical Practicum II. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 300. Health Care Delivery in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the American health care system and provides an opportunity to analyze the diverse components comprising the system. Major components of the system are examined, including inpatient and outpatient services, financing, insurance and technology. Provides the student a perspective of the variety of career choices in health care.

HPEX 310. Fitness and Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Presents the knowledge and pedagogical principles of strength, flexibility, aerobic and anaerobic training programs, as well as the role that exercise and lifestyle play on overall health. Emphasis is on understanding, experiencing and applying conditioning principles for individuals and how they impact health.

HPEX 325. Pathology and Pharmacology in Athletic Training. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 220, HPEZ 220L, PHIS 206 and PHIZ/BIOZ 206L. Acquaints the student with the pathology of athletic injuries and the proper use of pharmacology in the treatment of athletic injuries. Includes the pathomechanics of sports injuries and the use of medication in the treatment of sports injuries.

HPEX 330. Elementary Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 230, and either HPEX 201 or HPEX 202. Open only to general health and physical education majors in the health, physical education and exercise science program. Emphasis is given to the role of movement and theory in the education program and its implications for curriculum development and learning. Major consideration is given to the development of movement competency through thematic instruction.

HPEX 331. Methods in Driver Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 232. This course is designed to provide driver education instructional principles and methodology.

HPEX 332. Motor Learning and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to the major concepts of motor control and motor learning and the influencing conditions. It will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

HPEX 333. Psychosocial Aspects of Sport and Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The focus of this course is the scientific study of the behavior of individuals and groups within sport and physical activity in terms of the psychological effects and factors of sport participation, and in terms of the social relationships and social settings within which sport participation occurs.

HPEX 334. Measurement and Analysis in Teaching and Exercise Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Corequisite: HPEZ 334. Topics include selecting, administering, scoring and evaluating tests in the areas of general motor performance, health screening, fitness, sport skills and knowledge. Includes scientific test construction and basic statistical analysis.

HPEX 335. Elementary Physical Education for Physical Education Majors. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Designed to enhance knowledge of elementary physical education through an analysis of the aims, goals, objectives, programs and teaching methods. Construction of year-round curriculum and daily lesson plans. Emphasis also placed upon the acquisition of administrative and organizational knowledge dealing with facilities, equipment, teaching aids, testing, measurement and safety.

HPEX 337. Technology in Teaching Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Emphasis is placed on the application of the latest software and hardware technology used in the field of health and physical education. Students use public school settings and authentic data whenever possible.

HPEX 345. Nutrition for Health and Disease. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to HPEX majors. Overview of basic nutritional knowledge for both healthy individuals and those with increased risk of cardiovascular disease. The course relies on evidence-based research when discussing food and nutrition. Topics include science and politics of dietary guidelines; the science and controversies of carbohydrates, proteins, fats, vitamins and minerals; supplements; obesity and weight loss; digestion and absorption; allergies and intolerances; functional foods, phytochemicals and organic food.

HPEX 350. Nutrition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides learning opportunities that enable the student to acquire a practical and useful knowledge based on the sound principles of applied human nutrition. Emphasis will be on nutritional needs through the cycles of life providing information that will enhance the student's own lifestyle and provide experience in interpreting nutritional information for the public.

HPEX 351. Issues in Sexuality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of content, principles and strategies relating to issues in human sexuality both in the community and school settings. Basic concepts of human sexuality as they develop in today's world are presented. Issues include sexual maturity, reproductive systems, conception, birth, abortion and varieties of sexual behavior and sexual dysfunctions and disorders.

HPEX 352. Substance Abuse. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of drugs that are used and abused in contemporary society. Multidisciplinary lectures and discussions include the historical and sociological perspectives of drugs in the school and community; the psychological and physiological effects of drug use; and the role of local and regional resources. Designed for students, teachers, counselors, administrators and other interested persons. Rehabilitation methods and prevention programs also will be discussed.

HPEX 353. Disease Trends, Prevention and Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: HPEX 250. Provides students an opportunity to examine the major categories of diseases, infectious and noninfectious, including significant examples in each category. Students will also research major diseases affecting the U.S. population as well as global populations. Current modalities for the prevention, treatment and control of these diseases will be studied.

HPEX 354. Coping and Adaptation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on common stress factors in life such as death, personal loss, life changes, divorce and emotional problems, such as anger, loneliness and frustration. Strategies for dealing with such stressors are discussed and applied to both personal and professional settings.

HPEX 355. School and Community Health Resources. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Acquaints the student with current available school and community resources and educational materials for health information. Available services in a community health program will be surveyed.

HPEX 356. Community Health Education and Promotion: Theory and Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 300 and 353. Pre- or corequisite: HPEX 355. Introduces theories, roles and skills that are the foundation for the professional practice of community health education. Emphasizes the growing significance of health education in preventing and/or treating health problems, health promotion and improving quality of life. Presents the historical evolution and development of the profession and the various settings in which health educators practice. Assists in the preparation of students for certification as health education specialists.

HPEX 357. Personal Health and Behavior Change. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to provide students with a basic understanding of various contemporary personal and community health issues. Special emphasis placed on increasing awareness of multiple factors that affect individual health-behavior change and, subsequently, influence current and future health status.

HPEX 358. Introduction to Epidemiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210. Enrollment restricted to HPEX majors. Introduction of students to the field of public health epidemiology, emphasizing methods for assessing factors associated with the distribution and etiology of health and disease. Skills include methods for identifying and evaluating sources of health information, calculation of key epidemiologic measures, epidemiological investigation techniques, and evaluation of the strengths and weaknesses of different study designs.

HPEX 370. Coaching Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. A lecture/discussion course that identifies the practical administrative and organizational responsibilities coaches encounter. Realistic problem-solving is stressed.

HPEX 371. Psychology of Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines psychological issues related to physical activity, exercise and sport participation. Topics include individual and group motivation theory and techniques, leadership effectiveness, mental health, mental skills training, injury rehabilitation, eating disorders, exercise adherence, addiction, overtraining and use of ergogenic aids. Emphasizes examination of current research and application of psychological principles in a physical activity setting.

HPEX 372. Survey of Kinesiology and Physiology of Exercise. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the basic concepts of human biomechanics and exercise physiology. Includes basic and applied kinesiology and metabolic, endocrinological, cardiovascular and respiratory responses and adaptations to exercise. Emphasizes the integration of kinesiological and physiological principles.

HPEX 373. Structural Kinesiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 205. Corequisite: HPEX 373. Presents the anatomical aspects of human motion with particular attention given to application of anatomical structure and terminology in analysis of physical activities; emphasizes structure and function of the human musculoskeletal system and qualitative analysis of motor skills.

HPEX 374. Musculoskeletal Structure and Movement. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: BIOL 205. Pre- or corequisite: PHYS 201. Enrollment restricted to HPEX majors. Provides an understanding of the mechanical aspects of human motion with particular attention given to application of anatomical structure, terminology and biomechanics in the analysis of physical activity. Laboratory learning allows students to acquire practical knowledge and skills in palpation, biomechanical analysis and instrumentation.

HPEX 375. Physiology of Exercise. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIS 206. Corequisite: HPEX 375. Physiological changes in the human organism resulting from exercise, investigation of recent research in diet, drugs, fatigue, cardiovascular/respiratory fitness, conditioning programs for various age groups and the effects of exercise upon various components of physical fitness and health. Application of specific problems to physical education programs. Laboratory experience in the use of research instruments.

HPEX 380. Resistance Training for Health and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310 and HPEX 375. Enrollment restricted to HPEX majors. Provides students with the knowledge, skills and abilities to design and implement resistance training programs for a variety of populations. Covers the scientific and practical basis for resistance training to reduce injuries, improve health and optimize performance. Students actively participate in and demonstrate knowledge of a range of resistance exercise techniques, as well as preparticipation screening. Helps prepare those students wishing to attempt the National Strength and Conditioning Association's Certified Strength and Conditioning exam.

HPEX 391. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of three credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and some core professional courses; may include participatory experiences in which the student plays an active role in the experience; credits determined by the number of contact hours of the experience.

HPEX 392. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional introduction and some professional core courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 393. Field Experience I. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Prerequisites: permission of instructor; acceptance into teacher preparation program; and CPR certification. Health, physical education and exercise science majors only. Precedes the in-depth student teaching experience or the in-depth exercise science field experience; includes planned observations, tutorials, small group involvement under the supervision of the faculty and field supervisor; practices routine, basic and advanced procedures; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 394. Field Experience II. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Health, physical education and exercise science majors only. Designed to provide supervised practical experience in the teaching process or delivery of health education/health promotion programs; opportunities to further abilities in physical education and exercise science through practical application of skills in school or agency settings; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 395. Clinical Experience I. 3 Hours.

Semester course; 3 clinical hours. 3 credits. Prerequisites for students in the exercise science concentration: HPEX 375, junior standing and permission of instructor. Prerequisites for students in the health sciences concentration: HPEX 250, HPEX 300, HPEX 353 and BIOL 205, junior standing, and permission of instructor. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine and basic procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

HPEX 396. Clinical Experience II. 3-6 Hours.

Semester course; variable clinical hours. 3-6 credits. Health, physical education and exercise science majors only. Addresses required competencies in the athletic training, kinesiotherapy or community wellness education programs; provides experiences in an approved affiliate site under the supervision of faculty and approved clinical instructors; gains practical experience in routine, basic and advanced procedures associated with athletic training, kinesiotherapy or community wellness; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements and clinical competencies addressed.

HPEX 420. Athletic Training Administration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 395 and HPEX 396. Acquaints the student with the proper organization and management techniques used in health care administration of athletic training programs. Includes organization, management and administration of health care of the physically active in the athletic setting.

HPEX 430. The Organization, Administration and Supervision of the Intramural Sports Program. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Experiences in the organization and administration of an intramural sports program. Lecture will be devoted to the theory, philosophy, history and plans for the conduct of an intramural sports program. Laboratory experience will be obtained by working in intramural programs.

HPEX 431. Adapted Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares future teachers and professionals to meet the needs of persons with disabilities in organized health, physical education and rehabilitation programs in the school, community or hospital setting. Provides an overview of those disabilities found most frequently in public school and rehabilitation settings.

HPEX 432. Methods and Curriculum in Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in multiple settings; students acquire pedagogical skills and gain insight into the development of a physical education curriculum for elementary, middle and high school levels.

HPEX 433. Methods and Curriculum in Health Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in a classroom setting; students acquire pedagogical skills and gain insight into the development of a health education curriculum for elementary, middle and high school levels.

HPEX 435. Health Disparities in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 353 and HPEX 358. Enrollment restricted to HPEX majors. Provides an exploration into the magnitude of health disparities in the U.S. and the association with socioeconomic status, race, ethnicity, country of origin, cultural history and access to health services. Students are encouraged to broaden their perspectives and understand how various sociocultural factors impact health and health care delivery as it relates to the patient/consumer as well as the health care practitioner. Targets the values, beliefs, attitudes and customs of multiple segments of the population in relationship to age, gender, disability status, sexual orientation, area of residence, etc. Emphasizes and provides learning experiences to assist in the development of cultural competence.

HPEX 440. Chronic Disease and Exercise Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 375 and HPEZ 375L. Presents in-depth information of various concepts specifically related to exercise management of persons with chronic disease and/or disability. Provides scientific knowledge of various chronic diseases and disabilities that are commonplace and can be managed with physical activity. General topics include cardiovascular and pulmonary diseases, metabolic diseases, immunological and hematological diseases, orthopaedic diseases and disabilities, neuromuscular disorders, and cognitive, emotional and sensory disorders. Focuses on the understanding of specific physical and physiological characteristics associated with the various diseases and disabilities.

HPEX 441. Assessment and Exercise Intervention in Health and Disease. 3 Hours.

Semester course; 2 lecture and 1 laboratory hours. 3 credits. Prerequisite: HPEX and HPEZ 375. Provides in-depth information of various concepts specifically related to exercise assessment and prescription for healthy persons and those with chronic disease and/or disability. Examines the various concepts specifically related to measurement of cardiorespiratory fitness, pulmonary function, body composition, flexibility and muscular strength and endurance. Focuses on the development of exercise and physical activity prescriptions for healthy and diseased populations.

HPEX 445. Principles of Health Care Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 240 or 300. Exposes the student to basic aspects of administration and management in various health care settings. The traditional areas of administration and management, such as planning, organizing, staffing, directing and controlling will be addressed. Contemporary issues such as cultural competence, quality of care, ethics, and fraud and abuse will be examined. The course will provide a theoretical base that will enhance and facilitate the student's application of sound management principles in various practice settings.

HPEX 450. Program Planning and Evaluation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 356. Corequisite: HPEZ 450. Presents the foundations of planning, implementation and evaluation of community health education programs. Exposes students to programming and evaluation in a variety of community health settings, including schools, work sites, hospitals, state and local health departments and nonprofit agencies.

HPEX 451. Professional Conference in Community Health Education. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Offers the student an opportunity to participate in a professional conference focusing on community health education. This experience includes observing, summarizing and critically evaluating presentations, as well as preparing and delivering presentations and networking.

HPEX 470. Exercise Programming and Leadership. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310, HPEX 380 and HPEX 441. Provides knowledge and skills necessary for assessing, interpreting and designing health and activity programs for apparently healthy populations. Students develop leadership skills through presentation of ACSM exercise testing procedures and implementation of exercise prescriptions.

HPEX 475. Cardiovascular Pathophysiology and Pharmacology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 375 and HPEX 440 or equivalents. Enrollment restricted to HPEX majors. Presents theoretical principles of electrocardiography and the effects of pharmacological intervention in the treatment of cardiovascular disease. Specific emphasis placed on myocardial ischemia, myocardial infarction and their treatment through exercise rehabilitation protocols. The impact of pharmacological agents on the ECG and on exercise is explored.

HPEX 480. Professional Certification Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: HPEX 380, HPEX 441 and HPEX 470. Enrollment restricted to seniors in HPEX major. Provides structured experiences in the classroom, laboratory and exercise arenas to improve knowledge, skills and abilities in health-related physical fitness assessment and exercise programming. Supplements existing course work by correcting any deficiencies in learning competencies toward being a successful exercise professional. A review of certification materials is also an important component of the course.

HPEX 491. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and extensive core professional courses; may include research-based projects or more academically rigorous experiences; credits determined by the number of contact hours of the experience.

HPEX 492. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education, professional introduction and extensive core courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 493. Field Experience III. 3-12 Hours.

Semester course; variable hours. 3-12 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

HPEX 494. Field Experience IV. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

HPEX 495. Clinical Experience II. 6 Hours.

Semester course; 6 clinical hours. 6 credits. Prerequisites: HPEX 358, HPEX 395 and HPEX 435, each with minimum grade of C; or HPEX 395 and HPEX 441, each with minimum grade of C. Enrollment is restricted to students with senior standing in the health, physical education and exercise science major with permission of the instructor. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with the course instructor to obtain course requirements. Fulfills capstone requirement. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, intermediate and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

HPEX 496. Clinical Experience III. 3-6 Hours.

Semester course: 6 clinical hours. 6 credits. Prerequisites: HPEX 395, senior standing, permission of instructor and minimum grade of C in all HPEX prerequisite courses. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, basic and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

Health, Physical Education and Exercise Science Lab (HPEZ)

HPEZ 220. Introduction to Athletic Training Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 220. Laboratory fee required. A laboratory to introduce the basic skills used by an athletic trainer in the prevention and care of athletic injuries in the physically active.

HPEZ 320. Upper Extremity Assessment of Athletic Injuries Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 320. Laboratory fee required. This laboratory course includes practice in the skills of assessment and management of upper extremity athletic injuries in the physically active. Includes head, neck, thoracic, abdominal, shoulder, elbow, forearm, wrist, hand and finger injuries.

HPEZ 321. Lower Extremity Assessment of Athletic Injuries Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 321. Laboratory fee required. This laboratory course is designed to acquaint the student with the proper assessment and treatment procedures for lower extremity athletic injuries in the physically active. The lab will include prevention, care and treatment of lower back, hip, thigh, knee, lower leg, ankle and foot athletic injuries.

HPEZ 322. Therapeutic Exercise in Athletic Training Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 322. This laboratory course is designed to acquaint the student with the proper use of therapeutic exercise in the treatment and rehabilitation of athletic injuries in the physically active. The lab course will include the skills of the therapeutic exercise used in the treatment of groin, thigh, hip, knee, lower leg, ankle, foot, shoulder, elbow, wrist, hand, finger and back athletic injuries.

HPEZ 324. Therapeutic Modalities in Athletic Training Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 324. Laboratory fee required. This laboratory course will allow the student to develop the practical skills required to properly apply therapeutic modalities used to treat athletic injuries in the physically active.

HPEZ 334. Measurement and Analysis in Teaching and Exercise Science Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 334. Laboratory experience applying knowledge and skills presented in HPEX 334.

HPEZ 373. Structural Kinesiology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: BIOL 205. Corequisite: HPEX 373. Laboratory experience applying knowledge and theory from HPEX 373.

HPEZ 375. Physiology of Exercise Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: PHIS 206. Corequisite: HPEX 375. Provides practical application of the physiological principles presented in HPEX 375; assists students in the development of practical application competencies associated with assessment of acute and chronic effects of exercise on the human body.

HPEZ 450. Service-learning in Community Health Education Planning and Evaluation. 1 Hour.

Semester course; 1 service-learning/laboratory hour. 1 credit. Corequisite: HPEX 450. Provides experience working with community partners to gain firsthand exposure to specific target populations, observing the needs of those populations and current efforts, if any, to address those needs. Community partners include nonprofit agencies, schools, worksites, hospitals and state and local health departments.

History (HIST)

HIST 101. Survey of European History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Europe's place in the world. First semester: to 16th century. Second semester: 16th century to the present.

HIST 102. Survey of European History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Europe's place in the world. First semester: to 16th century. Second semester: 16th century to the present.

HIST 103. Survey of American History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

HIST 104. Survey of American History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

HIST 105. Survey of African History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: AFAM 105.

HIST 106. Survey of African History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: AFAM 106.

HIST 107. Survey of East Asian Civilizations. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of East Asian civilizations (China and Japan) from prehistory to the present, emphasizing the events, ideas and institutions that shaped, influenced and defined East Asia's place in the world. First semester: to the 14th century. Second semester: from the 14th century to the present.

HIST 108. Survey of East Asian Civilizations. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of East Asian civilizations (China and Japan) from prehistory to the present, emphasizing the events, ideas and institutions that shaped, influenced and defined East Asia's place in the world. First semester: to the 14th century. Second semester: from the 14th century to the present.

HIST 109. Survey of Latin American History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

HIST 110. Survey of Latin American History. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

HIST 191. Topics in History. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. The study of a selected topic or topics in history. See the Schedule of Classes for specific topics to be offered each semester.

HIST 201. The Art of Historical Detection: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces non-history majors to the methods of the discipline by undertaking a series of case studies in historical inquiry. Each case study will consist of a close examination of a single historical question, covering the general background to that question and exploring relevant primary and secondary sources. Students will then use this evidence to propose well-reasoned solutions to the question at hand.

HIST 202. History Without Borders: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces non-history majors to the analytical modes of transnational history, which explores networks of connection that link individuals and communities across established political or cultural boundaries. Students will consider the historical influence of networks such as systems of economic exchange, the movements of people or the spread of technologies and ideas. See the Schedule of Classes for topics offered each semester.

HIST 205. Survey of Virginia History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the history of Virginia from the colonial era to the present. Provides foundational knowledge of Virginia government, geography and economics. Discusses not only local history, but also the commonwealth's relationship with the United States and the world.

HIST 300. Introduction to Historical Study. 3 Hours.

Semester course; 3 lecture hours. 3 credits. History majors must complete HIST 300 with at least a grade of C prior to enrolling in more than six credits of 300- or 400-level history courses. This introduction to the historical discipline is required of all history majors. It is designed to enhance basic research, writing and study skills in order to increase student appreciation of, and performance in, the advanced courses within the history major.

HIST 301. The Ancient Near East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the ancient Near Eastern civilizations from the preliterate period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Crosslisted as: RELS 315.

HIST 302. Ancient Egypt. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of the history and culture of ancient Egypt from the Predynastic Period through the age of the New Kingdom. In addition to the historical reconstruction, emphasis is placed on the art, literature and religion of each of the major periods.

HIST 303. Greek Civilization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the unique cultural heritage of Greece and the historical patterns that rose from it, from the Heroic Age to the urban worlds after Alexander, 1400 B.C.-146 B.C.

HIST 304. Roman Civilization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of Roman history as it derived from Roman cultural institutions, from the Etruscan period through the conflict of the pagan and Christian worlds and advent of the barbarians, 753 B.C.-A.D. 454.

HIST 310. The Early Middle Ages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A topical, thematic, integrative and problems approach to the emergence of a distinctive European community during the period frequently alluded to as the "Dark Ages."

HIST 311. High and Later Middle Ages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A detailed historical overview of developments in Western Europe from the end of the first millennium through the end of the 15th century. Crosslisted as: RELS 308.

HIST 312. Europe in the Early Modern Period, 1350-1650. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Describes the political, intellectual, religious and social developments in Europe from the Black Death through the wars of religion, including the Renaissance, the Reformation and the Voyages of Exploration.

HIST 313. Europe in Absolutism and Enlightenment, 1648-1815. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Examines the political, social and economic orders of Old Regime Europe in the context of their increasing contradictions; introduces the cultural and intellectual forces that helped challenge that regime; culminates in the French Revolution and Napoleon.

HIST 314. The Zenith of European Power, 1815-1914. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A study of the period in which the nations of Europe reached their height of world power between the reconstruction of Europe after the Napoleonic Wars and the eve of World War I. Topics include the rise of nationalism, liberalism and socialism; the spread of capitalism and industrial society; the beginnings of mass politics; the new imperialism; the diplomatic revolution in the European state system before World War I.

HIST 315. The Age of Total War in Europe, 1914-1945. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A study of the transformation of European society precipitated by World War I and World War II. Emphasis is placed on the origin, nature and repercussions of total war; the crisis of democracy and the rise of modern dictatorships; changes in political, economic and social institutions; and the decline of European power.

HIST 316. Postwar Europe, 1945 to the Present. 3 Hours.
Semester course; 3 lecture hours. 3 credits. An examination of Europe's social, economic and political recovery after World War II and of the transformation of Europe from the center toward the periphery of world power.

HIST 317. History of France I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A history of France from Gallo-Roman times through the French Revolution and the Napoleonic era.

HIST 318. History of France II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A history of France from 1815 to the present.

HIST 319. History of Germany I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Covers major developments in Germany from the 30 Years War and rise of Prussia through the unification of the German nation-state in 1871.

HIST 320. History of Germany II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Covers major developments in Germany from 1871 through World War I, Weimar, Third Reich, World War II and reunification in 1990.

HIST 321. The Holocaust. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A multidisciplinary examination of the events leading to and culminating in the Nazi extermination of six million Jews; the historical settings of European Jewry and of German fascism; the role of traditional anti-Semitism; the psychology of aggressor and victim; the Holocaust in art and literature and the moral implications for today.

HIST 322. Nazi Germany. 3 Hours.
Semester course; 3 lecture hours. 3 credits. The origin and nature of Hitler's Third Reich. A study of the failure of the Weimar Republic; genesis of the Nazi racial ideology and party structure; the Nazi political, social and cultural order after the seizure of power; Nazi foreign policy leading to war and genocide; and an analysis of the personality of Hitler.

HIST 324. History of Early Modern Britain. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Explores the development of British politics, society and culture from the Tudor Revolution in government and through the Reformation, English civil wars and Restoration.

HIST 325. History of Modern Britain. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Explores the development of British politics and society from the Restoration to the mid-20th century, including such topics as the Whig oligarchy, the Industrial Revolution, Victorianism, the impact of the world wars and the problems of Empire.

HIST 326. The British Empire. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Examines the origin, development and decline of British overseas expansion from the late 16th century through the mid-20th century, including colonial settlements in Ireland, North America, the Caribbean, Australia and South Africa; dependencies and protectorates in Africa and the Middle East; and the empire of India. Focuses on the political and legal structures that enabled the administration and subordination of such a large and fragmented area and assesses the extent to which empire shaped and complicated gender, class and racial relations both at home and throughout the British imperial world.

HIST 327. History of Russia I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Russian history to 1855, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia.

HIST 328. History of Russia II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Russian history from 1855 to the present, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia.

HIST 329. History of Spain and Portugal. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A survey of the history of the Iberian peninsula from ancient times to the present, with an emphasis on the distinctive culture and attitude toward life that developed south of the Pyrenees.

HIST 330. History of Gender and Sexuality in Europe I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from c. 500 BCE through industrialization. Explores the notions of femininity and masculinity as they were expressed in the economics, family structures and intellectual and religious discourse within and amid Greek, Hellenistic, Roman, Germanic and Norse, and medieval Latin Christian cultures, and traces the changes brought to the medieval cultural synthesis by European colonial expansion, the reformations and the Industrial Revolution. Crosslisted as: GSWS 339.

HIST 331. History of Gender and Sexuality in Europe II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A study of gender and sexuality in Europe since industrialization. The course offers a particular focus on the lives of European women, as well as sexual and gender minorities who by the end of the 20th century would identify as LGBTQ +. Topics will include the development of European feminisms, treatment of gender and sexuality under fascism, and the sexual revolution. Crosslisted as: GSWS 340.

HIST 332. History in Film. 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits with different topics. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events and propaganda.

HIST 333. History of the Jewish People I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the biblical period to the early modern period, including the Israelite conquest of Canaan, Judea in Hellenistic and Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and Jewish settlement in the Ottoman Empire. Crosslisted as: RELS 318.

HIST 334. History of the Jewish People II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the early modern to the present, including the impact of the Emancipation, the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and world Jewry. Crosslisted as: RELS 319.

HIST 335. History of Christianity I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the early modern period, or the age of the Reformations. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings. Crosslisted as: RELS 327.

HIST 336. History of Christianity II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from ca. 1500 to the present. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings.

HIST 338. World War I in the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores WWI and its aftermath from the perspective of the Ottoman Empire and its diverse populations. The topics to be considered are the socioeconomic and cultural effects of total mobilization on the populations of the Middle East; famines, genocides and population exchanges; international politics; the mandate system and anti-colonialist movements; and the creation of nation-states in the post-WWI Middle East.

HIST 340. The Middle East, 600-1600. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores two transformative historical events that took place in the Middle East between the sixth and 16th centuries: 1) the emergence of Islam and the development of the Islamic Empire and its social, cultural and political legacy in the Middle East (seventh to 10th centuries) and 2) the influx of outsiders to the region, such as the Turkish-speaking tribes, the crusaders and the Mongols, and the role these newcomers played in shaping the Middle East starting in the 10th century.

HIST 341. Modern Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analysis of the history, problems and prospects of the nations and peoples of the Middle East with emphasis on developments since the Balfour Declaration of 1917.

HIST 342. Early Modern Ottoman Empire. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the history of the Ottoman Empire from around mid-15th century until roughly the late-18th century. Examines the Ottoman Empire as a Euro-Mediterranean polity, exploring its social, cultural, economic and political history from a global perspective.

HIST 343. Modern Ottoman Empire. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the transformations of the late-Ottoman state and society by organizing the material around several historical processes and frameworks, such as the phenomenon of the gunpowder empires, integration of the empire to the global market, the decline paradigm, impact of colonialism and imperialism, Tanzimat reforms, the shift from subjecthood to citizenship, modernity, transformation of religious identities, state and nation formation, nationalism, secularism, gender and war mobilization.

HIST 344. American Military History to 1900. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Investigates the emergence and evolution of the American military from 1600 to 1900, with a focus on nation building and nationalism, the relationship between the civil and military spheres, professionalization, the experiences of the armed forces, strategic and tactical evolution, and the relationships among war, technology and nature.

HIST 345. American Colonies, 1450-1776. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the development of the 13 original colonies; the establishment and growth of society, politics and the economy; and modification in the relationship between the provinces and Great Britain.

HIST 346. The American Revolutionary Era, 1763-1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the late-18th-century revolutions which molded the American political system – the revolution of colonial Englishmen against Great Britain and the revolution of the nationalists against the government established by the American Revolution, which produced and firmly established the United States Constitution.

HIST 347. Antebellum America, 1800-1860. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Federalist era to 1860. A study of the events, forces and personalities that shaped Antebellum America and led to Southern secession and Civil War.

HIST 348. The American Civil War and Reconstruction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the major events, forces, personalities and significance of the Civil War and Reconstruction eras.

HIST 349. The Emergence of Modern America, 1877-1914. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the major political, legal, social and economic trends in the United States at this time, focusing on the industrialization of the nation and the resulting effects it had on such diverse matters as urbanization, immigration, economic distribution and cultural affairs, culminating in the Progressive reform movement.

HIST 350. U.S. History, 1900-1945. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the political, social, economic and cultural history of the United States from 1900 to 1945, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status and changing relationships within government and society.

HIST 351. U.S. History Since 1945. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the political, social, economic and cultural history of the United States in the 20th century, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status and changing relationships within government and society.

HIST 352. History of the South I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A regional history of the Old South from the colonial period to 1861, placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States.

HIST 353. History of the South II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A regional history of the New South from 1865 to the present, placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States.

HIST 354. History of Native Americans in the South. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the history of Native Americans in the American South and how colonial encounters with Europeans impacted life in indigenous towns, villages and farmsteads.

HIST 355. Native Americans in Modern America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines some of the key historical and cultural issues in American Indian history during the 20th century.

HIST 356. History of Virginia I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on the central themes, events and personalities of the state's history from the pre-colonial period to 1865.

HIST 357. History of Virginia II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on the central themes, events and personalities of the state's history from 1865 to the present.

HIST 358. History of the American Frontier. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the western movement in the United States from the time the first outposts were established to the end of the frontier in the 19th century. Particular attention to the influence of the frontier upon the American mind and ideals.

HIST 359. The History of Latin American Cities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of Latin American cities from Buenos Aires to the U.S.-Mexico border that explores how cities have represented social, political, cultural and environmental change. The course also considers interactions between city, countryside and hinterlands in order to gather a more complete picture of the dynamics of Latin American history.

HIST 360. The Long Civil Rights Movement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines race relations and changes to race relations, focusing on African-Americans in the United States' South but including related struggles for civil rights and equality from the late-1800s to the present.

HIST 361. Americans from Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: AFAM 361.

HIST 362. Americans from Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: AFAM 362.

HIST 363. American Religious History I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of religious movements, events and ideas in America from indigenous and colonial traditions to the Civil War, with attention to the diversity of religious expression and the relationship between church and state.

HIST 364. American Religious History II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of religious movements, events and ideas in America from the Civil War to the present, with attention to the diversity of religious expression and the relationship between church and state.

HIST 365. History of Gender and Sexuality in America I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from the first colonial settlements through the Civil War. Explores the changing relation of femininity and masculinity to families, economics, politics, religions, race and culture for the wide variety of peoples who inhabited, immigrated to or were forced to migrate to America and the subsequent United States. Crosslisted as: GSWS 341.

HIST 366. History of Gender and Sexuality in America II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analyzes historical changes in gender and sexuality from Reconstruction to the present. Examines the relationship between gender, race, ethnicity and class within American society and the struggles for suffrage, social reform, employment opportunities and sexual freedom in the modern United States. Crosslisted as: GSWS 342.

HIST 367. History of East Africa, 1895-Present. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Covers the history of East Africa from the declaration of European protectorates over the region in the closing decades of the 19th century to the present. Addresses the forces that influenced the European occupation of East Africa; the subjugation of the region; the evolution and development of both colonial rule and African responses; East Africa and the European wars (World War I and World War II); the emergence of African nationalism; and the road to independence. Discusses the recent issues shaping East African states, including democracy versus authoritarianism, economic integration and the international community, and ethnicity and violence. Principally concerned with Kenya, Uganda and Tanzania, but touches on the broader region as well.

HIST 368. Colonialism in Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines colonial land and labor policies using case studies from Kenya, the Belgian Congo and South Africa, and the struggles against the apartheid system in South Africa. Topics include colonial land policies, the diverse methods adopted by colonial authorities to incorporate Africans into the wage economy, local response and the broad impact of these policies on Africans and the movement toward independence in South Africa.

HIST 369. Global LGBTQ+ History Since 1750. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Investigates sexual and gender non-normativity in global perspective since 1750. The course emphasizes colonialism and global interconnectivity, and the way they have shaped identities and experiences of same-sex desiring and gender nonconforming individuals. Crosslisted as: GSWS 369.

HIST 370. History of Central America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of the history of the region beginning with pre-Columbian civilizations and continuing to the present. Topics include the Spanish conquest, the liberal-conservative struggle, U.S. gunboat diplomacy, the Sandinista Revolution, civil wars in El Salvador and Guatemala and current challenges to democracy in the region.

HIST 371. History of Mexico. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Mexican history, including topics such as the pre-Columbian civilizations, the Spanish conquest and the colonial order, as well as independence, the struggle for reform, revolution and the development of the modern state.

HIST 372. History of Brazil. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Brazilian history including topics such as the pre-Columbian civilizations, Portuguese colonialism, the independent empire and the republic, and populism and the modern state.

HIST 373. History of the Andes to 1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical view of the historical process of the Andean region from the pre-Columbian period to independence from Spain. Focuses mainly on the core of the region, which currently comprises the territories of Bolivia, Ecuador and Peru. Special attention to the indigenous population of the Andes -- also known as "Indians," "Andeans" or "Amerindians" -- and their interactions with other ethnic groups (Europeans, Criollos, Mestizos, as well as Africans and their descendants) in the political, economic, social and cultural realms.

HIST 374. History of the Andes From 1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical view of the historical process of the Andean region from independence from Spain to the present. Focuses mainly on the core of the region, which currently comprises the territories of Bolivia, Ecuador and Peru. Special attention to the indigenous population of the Andes -- also known as "Indians," "Andeans" or "Amerindians" -- and their interactions with other ethnic groups (Europeans, Criollos, Mestizos, as well as Africans and their descendants) in the political, economic, social and cultural realms.

HIST 375. History of Immigration to the United States. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Surveys patterns of migration to the United States from colonial times to the present. Considers migration to the United States as part of the evolving global labor market and colonial expansion; the relationship of immigration to nation-building, westward expansion, foreign policy and national identity; the legal regulation of immigration; the political debates surrounding immigration; and the experience of immigrants.

HIST 376. Caribbean History to 1838. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late 15th century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition. Crosslisted as: AFAM 392.

HIST 377. Caribbean History Since 1838. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Covers major developments in the history of the Caribbean in the period after the British abolition of slavery in 1834, with a major focus on the social and economic aspects of change.

HIST 378. Atlantic Slavery. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines social and economic aspects of slavery in the Atlantic world, principally Africa, the Caribbean, the United States and Canada.

HIST 379. The History of Modern Japan. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political and intellectual changes that occurred in Japan throughout this time period.

HIST 380. Forced and Coerced Labor in Africa and the Americas. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines a broad range of forced and coerced labor in Africa and selected parts of the Americas, including the United States, Canada and the Caribbean, from around the 17th century to the 20th century. The role that gender and race played in slavery and coerced labor will be given particular attention. Crosslisted as: AFAM 390/GSW 390.

HIST 381. History of West Africa to 1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to 1800, with emphasis on the rise of states and empires, the introduction, spread and impact of Islam, the Atlantic slave trade and its effects, and colonialism. Crosslisted as: AFAM 387.

HIST 383. History of Southern Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa. Crosslisted as: AFAM 389.

HIST 384. Africa: Social, Cultural and Economic History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of economic, social and cultural developments in Africa from the beginning of the 19th century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs. Crosslisted as: AFAM 388.

HIST 385. The History of Modern Japan. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political and intellectual changes that occurred in Japan throughout this time period.

HIST 386. History of Late Imperial China, 900-1800. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the history of China from 900 to 1800 CE. A general overview of China's political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China between 900 and 1800 CE. In addition, students will be introduced to such concepts and issues as empire building, conquest dynasties, steppe and sedentary societies, sociocultural history and Western and Chinese historiography.

HIST 387. The History of Modern China, 1800 to the Present. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Examines China's modern history beginning at the height of the Qing Dynasty (1644-1912) in 1800. A general overview of China's traditional political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China from 1800 to the present. This course is divided into three sections: the first examines the factors leading to the collapse of China's last dynasty in 1912; the second focuses on the revolutionary changes taking place in China during the first half of the 20th century (from 1912 to 1949); and the final section looks at Communist China since 1949.

HIST 389. History in Film: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits with different topics. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events and propaganda.

HIST 390. Historical Archaeology. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 or ANTH 105/INTL 104, and any history course. A review of historical archaeology, recognizing its contemporary emphasis on the spread of European cultures across the globe beginning in the 15th century. Methods and findings of archaeological research from the United States, Europe and Africa will be covered with special emphasis on the study of documents and artifacts related to the emergence and present state of the modern world. Students will participate in field research. Crosslisted as: ANTH 394.

HIST 391. Topics in History. 1-3 Hours.
Semester course; 1, 2 or 3 lecture hours. Variable credit. May be repeated with different topics for a maximum of 9 credits. An in-depth study of a selected topic in history. See the Schedule of Classes for specific topics to be offered each semester.

HIST 392. Revolutions in Science I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A survey of the history of science from the ancient Greeks to 1800, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: SCTS 392.

HIST 393. Revolutions in Science II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A survey of the history of science from 1800 to the present, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: SCTS 393.

HIST 394. History of Technology. 3 Hours.
Semester course; 3 lecture hours. 3 credits. A survey of the history of the technological development of Europe and North America from antiquity through the end of the 20th century. Outlines major historical trends and turning points in the development and use of technology, and students will take up a small number of illustrative case studies.

HIST 397. Genetics and Society: 1865 to the Present. 3 Hours.
Semester course; 3 lecture hours. 3 credits. An investigation of the science and technology of heredity in its historical, cultural and political contexts, emphasizing the ways in which genetic theories have been applied in attempting to solve social and biological problems. Crosslisted as: SCTS 397.

HIST 398. History of Medicine and Public Health: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated with different thematic content for a maximum of six credits. Studies in selected topics in the history of medicine, medical science or public health. Includes introduction to the interdisciplinary approaches practiced in the history of medicine as well as the historical content and relevant analytical skills needed to examine the specific course theme. Crosslisted as: SCTS 398.

HIST 399. Introduction to Science and Technology Studies. 3 Hours.
Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: GVPA 399/SCTS 300.

HIST 401. Studies in Ancient History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of ancient history.

HIST 402. Studies in Medieval History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of medieval history.

HIST 403. Studies in Early Modern European History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. Repeatable once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of early modern European history.

HIST 404. Studies in Modern European History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. Repeatable once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of modern European history.

HIST 406. Studies in Middle Eastern History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Middle Eastern history.

HIST 407. Studies in Early American History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of early American history.

HIST 408. Studies in Modern American History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of modern American history.

HIST 409. Studies in Latin American History: ____ 3 Hours.
Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Latin American history.

HIST 410. Studies in African History: ____ 3 Hours.

Semester course; 3 lecture hours, 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of African history.

HIST 411. Studies in the African Diaspora: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of the African diaspora.

HIST 412. Studies in Asian History: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Asian history.

HIST 413. Studies in Atlantic History: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Atlantic history.

HIST 414. Studies in Indigenous History: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of indigenous history.

HIST 415. Studies in the History of Religion: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of religious history.

HIST 416. Studies in the History of Women, Gender and Sexuality: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HIST 300 or permission of instructor. Repeatable once, with a different topic, for credit. Courses taught under this heading provide advanced study and analysis of the theory and field of the history of women, gender and sexuality.

HIST 417. Studies in African American History: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of African American history.

HIST 420. Studies in Historical Method: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Focuses on a particular methodology used by historians as they investigate the past.

HIST 421. Studies in Comparative History: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: HIST 300 or permission of instructor. Undertakes a topic that cuts across regions and cultures, making comparative judgments about human events.

HIST 485. Seminar in Historiography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for maximum of 6 credits with different topics. Introduction to questions in historiography, meaning, methodology and interpretation in the teaching and writing of history.

HIST 490. Seminar in History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: HIST 300 with a minimum grade of C. Research and analysis of a selected historical topic in a seminar setting. See the Schedule of Classes for each semester's offerings.

HIST 492. Independent Study. 2-4 Hours.

Semester course; variable hours. 2-4 credits per semester. Maximum total of 6 credits. Open generally to students of only junior and senior standing who have acquired 12 credits in the departmental disciplines. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course.

HIST 493. Internship. 2-4 Hours.

Semester course; 2-4 hours; 2-4 credits. May be repeated for a maximum total of 6 credits. Prerequisite: HIST 300 with a minimum grade of C. Enrollment generally open to students with senior standing. Students receive credit for work on historical projects with approved agencies. Determination of the amount of credit and permission of departmental internship coordinator must be procured prior to registration for the course.

Humanities and Sciences (HUMS)**HUMS 100. Intensified Problem Solving in Chemistry 100. 2 Hours.**

Semester course; 4 workshop hours. 2 credits. Prerequisite: Students must be eligible to take MATH 131 or higher. Corequisite: CHEM 100. Problem-solving sessions will engage students in cooperative learning in open discussions of the elementary principles of chemistry. Students work on chemistry problems in small groups in which each student participates in the presentation of problem solutions to the class. Students receive mock quizzes and exams and will be given assistance on homework problems assigned in their chemistry lecture. This course is for students who do not meet the criteria for enrollment in CHEM 101. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

HUMS 101. Intensified Problem Solving in Chemistry 101. 2 Hours.

Semester course; 4 workshop hours. 2 credits. Prerequisite: CHEM 100 with a grade of C or higher or a satisfactory score on the Chemistry Placement Test. Students must be eligible to take MATH 151 or higher. Corequisite: CHEM 101. Problem-solving sessions will encompass the fundamental principles and theories of chemistry. Students will form and work in small study groups and must participate in open discussions of the concepts of chemistry. Each student participates in the presentation of problem solutions to the class. Students will receive mock quizzes and exams and will be given assistance on homework problems assigned in the general chemistry lecture. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

HUMS 102. Intensified Problem Solving in Chemistry 102. 2 Hours.

Semester course; 3 workshop hours. 2 credits. Prerequisite: CHEM 101 with a grade of C or higher, MATH 151 or higher. Corequisite: CHEM 102. Problem-solving sessions will encompass the fundamental principles and theories of chemistry. Students will form and work in small study groups where they engage in cooperative learning and must participate in open discussions of the concepts of chemistry. Each student participates in the presentation of problem solutions to the class. Students will receive mock quizzes and exams and will be given assistance on homework problems assigned in the general chemistry lecture. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

HUMS 202. Choices in a Consumer Society. 1 Hour.

Semester course. 1 credit. Corequisite: UNIV 112. Provides a framework for understanding the nature of choices made in a consumer society, with an emphasis on the financial consequences of those choices. Students will gain the practical knowledge needed to make informed personal financial decisions as they address immediate, short-term and long-term consumer choices. Administered primarily as a self-paced, computer-aided instructional course.

HUMS 291. Special Topics in the Humanities and Sciences. 1-4 Hours.

Semester course; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

HUMS 300. Great Questions of the Social Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The social sciences explore human aspects of the world in fields of study that include anthropology, criminology, economics, education, geography, law, political science, psychology and sociology. This course explores fundamental questions of social science and examines their historical and contemporary relevance.

HUMS 391. Special Topics in the Humanities and Sciences. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

Humanities and Sciences – Interdisciplinary (HUSI)**HUSI 190. College Seminar. 1 Hour.**

1 lecture hour. 1 credit. May be repeated once for credit. Open only to students who participate in these programs. A seminar designed for first-year programs coordinated through the office of the dean of the College of Humanities and Sciences. Designed to help students integrate general education courses.

HUSI 399. Experiential Learning: _____. 0 Hours.

Semester course; 0 lecture hours. 0 credits. Participation in a College of Humanities and Sciences-designated experiential learning activity or project. Provides the student with an opportunity to engage in meaningful hands-on research, scholarship or creative work directly relevant to realizing their personal and professional goals. Registration requires permission of the instructor, who will confirm with the college dean's office that a qualifying experience has been approved for the student. Graded as pass/fail.

HUSI 491. College Topics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Open primarily to seniors; others with permission of instructor. A discussion of complex issues that are of enduring value or of critical interest to society. The goals of the course are to (1) bring general principles from disciplinary or a variety of disciplinary contexts to bear on specific problems; (2) exercise critical thinking; (3) understand and integrate diverse perspectives; and (4) explore models of decision-making, underlying assumptions and implications. See the Schedule of Classes for specific topics to be offered each semester.

Interdisciplinary Science (INSC)**INSC 201. Energy!. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 131, MATH 141, MATH 151, MATH 200 or higher MATH; or BUSN 171*, BUSN 212** or SCMA 301***; or STAT 208, STAT 210, STAT 212 or higher STAT; or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. A study of global energy demands, how they are being met, environmental consequences and alternative energy sources. *Formerly MGMT 171, SCMA 171; **formerly MGMT 212, SCMA 212; ***formerly MGMT 301.

INSC 300. Experiencing Science. 3 Hours.

Semester course; 5 studio hours. 3 credits. Prerequisites: 4 credits in biology, 3 credits in physical science, 3 credits in mathematics, and STAT 208, 210, 212, or 312. Study of the methods and processes used by scientists in investigations. Guided, active replication of great discoveries in major scientific disciplines in physical science, life science and earth science.

INSC 301. Investigatory Mathematics and Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 4 credits in biology, 4 credits in physical science, 3 credits in mathematics and STAT 208 or STAT 210. Students investigate real-world science problems, formulate model solutions to the problems, produce project reports and present their solutions to class. Problems selected from areas including water quality, epidemics and spread of diseases, heat loss and gain, genetics and drugs in the body.

INSC 310. Content of Elementary Science. 3 Hours.

Semester course; 4 lecture/laboratory hours. 3 credits. Prerequisite: 11 credits of science courses. Designed for preservice elementary school teachers. Develops mastery of select topics in the physical, earth and life science strands appropriate to the K-6 level. Topics will be presented in the context of hands-on activities designed for the classroom, using techniques such as guided inquiry and the learning cycle.

INSC 490. Capstone Research Experience in Interdisciplinary Science. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to seniors in the science major with at least 85 credit hours earned toward the degree. Intensive study of a contemporary scientific problem engaging more than one scientific discipline. Emphasis on understanding scientific research and science writing. Course is taught online and requires an average of six to 10 hours per week of student effort.

International Studies (INTL)**INTL 101. Human Societies and Globalization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary inquiry into how societies around the world are organized and how they are interrelated on social, economic, political and cultural dimensions. The course is organized around themes that are important to prominent globalization processes – topics such as human rights, global inequalities, cultural globalization, global crime, globalization and religion, the global mass media, and environmental issues. Students also explore the implications of rapid social change for international issues and interpersonal interaction.

INTL 102. Introduction to Political Economy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues, tax policy, inflation expectations, unemployment, foreign trade and the effectiveness of fiscal and monetary policies. Crosslisted as: ECON 101.

INTL 103. Introduction to Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from global cultures, and on the four fields of anthropology. Crosslisted as: ANTH 103.

INTL 104. Introduction to Archaeology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of archaeological sites, methods and theories from around the world, from the earliest human cultures, to the rise and spread of civilizations, to the modern era. Crosslisted as: ANTH 105.

INTL 105. International Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior and other selected issues as appropriate. Crosslisted as: POLI 105.

INTL 151. Global Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores how communication media and globalization drive each other and how they both impact the nation-state as well as international institutions. Examines how technology, the global economy and international media corporations influence culture, politics, business, law and other institutions in countries around the world. Explores the relationship between media systems and governments and how both are affected by technology and globalization. Crosslisted as: MASC 151.

INTL 200. Introduction to African Societies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: AFAM 200/ANTH 200.

INTL 201. Rethinking the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary comprehensive approach to understanding the Middle East and North Africa. Offers an overview of the region and its place in the contemporary world that includes, but is not limited to, its sociocultural composition, geography, traditions and cultural output.

INTL 204. Language and Groups in the United States. 3,4 Hours.

Semester course; 3-4 lecture hours. 3-4 credits. Taught in English. This course introduces students to the sociocultural experience and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural and social issues through fiction and nonfiction texts, films and multimedia pertaining to specific language groups, such as: Latinos, Italian-Americans, German-Americans or Native Americans. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: FRLG 204.

INTL 211. Contemporary World Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A study of selected literature published in the past 25 years and chosen from a number of different nations and cultures. Crosslisted as: ENGL 211.

INTL 250. Confronting Climate Crisis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the many ways that people – including students – are confronting the climate crisis, from the local to the global. Engages with major debates in the fight to understand and address climate crisis, centering ways in which Black, migrant, Indigenous peoples and folks in the Global South are forging a path toward socially just responses. Crosslisted as: SOCY 250.

INTL 291. Topics in International Studies. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different content for a maximum of six credits. An introductory study of a specialized topic in international studies. See the Schedule of Classes for specific topics to be offered each semester.

INTL 303. World Regions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture and urban conditions. Regions to be selected each semester from Anglo-America, Latin America, western Europe, Eastern Europe, the former USSR, Middle East and North Africa, Africa (south of the Sahara), Indian subcontinent, China, Japan, Southeast Asia, and Oceania. May be taken only once for credit. Crosslisted as: URSP 303.

INTL 306. Introduction to Judaism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices and beliefs. Crosslisted as: RELS 306.

INTL 307. Black Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: AFAM 307/RELS 307.

INTL 309. Gender and Global Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how health policies produce and regulate gendered bodies and sexualities. Topics may include how colonial medicine and health policies of detection, diagnosis, surveillance, quarantine and confinement were implemented as methods of social control. Analyzes continuities between colonial medicine and more contemporary interventions that in the name of individual and communal health attempt to shape proper sexualities and gendering. Crosslisted as: AFAM 309/ANTH 309/GSW 309.

INTL 311. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Hinduism, Buddhism, Confucianism, Taoism and Shinto. Crosslisted as: RELS 311.

INTL 312. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Zoroastrianism, Judaism, Christianity and Islam. Crosslisted as: RELS 312.

INTL 314. Man and Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. Crosslisted as: ENVS 314.

INTL 315. Economic Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. An introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development. Crosslisted as: ECON 315.

INTL 316. Religious and Ethnic Minorities in the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an overview of ethnic and religious minorities in the contemporary Middle East and North Africa. Covers the main theories in ethnic studies in order to examine how the concept of minority (religious and ethnic) has emerged as a key factor in the cultural, economic, political, religious and educational policies of modern Middle Eastern countries.

INTL 317. Islam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the seventh century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, and mysticism (sufism) and law (shari'ah) and an overview of ritual practices, fundamental beliefs, theological principles and current issues in Islam and international relationship. Crosslisted as: RELS 317.

INTL 320. International Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Designed to help students develop an understanding of international marketing policies and the differences among foreign marketing environments. Students compare and contrast domestic and international marketing and examine recent changes in the international marketing environment. Crosslisted as: MKTG 320.

INTL 327. Introduction to Intercultural Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the basic concepts, principles and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process and nonverbal communication aspects. Appropriate for business and non-business majors. Crosslisted as: MGMT 329.

INTL 328. Russian Society in Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of the instructor. An analysis of Russian culture and social institutions as they are today and in historical perspective. Throughout the course interrelationships among politics, the economy and social life are examined, with particular emphasis on the ideological implications of Russian/Soviet architecture, art and mass media; on environmental issues and health; on social problems and the legal systems; and on gender, the work world and family interaction.

INTL 329. International Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates and international monetary systems. Crosslisted as: ECON 329.

INTL 330. Global Societies: Trends and Issues. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic and political relations, and an inquiry into implications of these developments for individuals, localities, nations and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations. Crosslisted as: SOCY 330.

INTL 331. Survey of Latin American Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. An introduction to major authors and trends up to the present. Crosslisted as: SPAN 331.

INTL 332. Revolutions and Counterrevolutions in the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of the Arab uprisings of 2011 and the ways in which the mass protests continue to shape the region. Includes an introduction to theories of revolution and counter-revolution. Examines in detail the social, political and economic reasons for the uprisings, as well as the connection to earlier revolutions in the region.

INTL 333. Geography of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: AFAM 333/URSP 333.

INTL 334. Regional Geography of _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as North America, Europe, Latin America, the Middle East and India, the USSR and Eastern Europe. See the Schedule of Classes for specific region to be studied each semester. Crosslisted as: URSP 334.

INTL 340. World Cities Outside of North America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the theories and ideas of urbanism through writings and cases of major global cities outside of the United States. Crosslisted as: URSP 340.

INTL 341. Global Ethics and the World's Religions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts toward a global ethic. Crosslisted as: RELS 340.

INTL 345. Great Cities of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: FRLG 345/URSP 350.

INTL 348. South American Ethnography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. General ethnographic survey of both highland and lowland indigenous cultures of South America and cultural changes as a result of European contact. Crosslisted as: ANTH 348.

INTL 349. Rethinking a Continent: Latin America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. This course surveys contemporary cultures of Latin America. It addresses historical sociocultural developments from an anthropological perspective and introduces concepts from social justice studies, development anthropology and applied anthropology. Crosslisted as: ANTH 349.

INTL 350. Rethinking a Continent: Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of historical sociocultural developments from an anthropological perspective with an emphasis on integrative and disintegrative forces that have shaped cultures and identities in Europe. Introduces concepts from sociocultural anthropology, social justice studies and applied anthropology. Crosslisted as: ANTH 350.

INTL 351. Governments and Politics of the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects of traditionalism, the political nature of transition, the instruments of political modernization, and evolution and revolution in the political process of Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the principal forces that shape the policies and political dynamics of the region. Crosslisted as: POLI 351.

INTL 352. European Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries. Crosslisted as: POLI 352.

INTL 353. Latin American Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges. Crosslisted as: POLI 353.

INTL 354. Russian and Post-Soviet Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes and disintegration of the Soviet political system and the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems and foreign policy. Crosslisted as: POLI 354.

INTL 355. Asian Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China and India. Crosslisted as: POLI 355.

INTL 356. Government and Politics of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism, and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: POLI 356/AFAM 356.

INTL 357. Politics of Southern Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: POLI 357/AFAM 357.

INTL 358. Concepts of Comparative Government. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development. Crosslisted as: POLI 358.

INTL 360. World Classics of Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism and other religious traditions. Crosslisted as: RELS 350.

INTL 361. Issues in World Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collective security, international economic competitiveness, global environmental politics as well as selected others. Topics will vary with current events and trends in the international arena. Crosslisted as: POLI 361.

INTL 362. International Organizations and Institutions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community and the Organization of American States. Crosslisted as: POLI 362.

INTL 363. U.S. Foreign Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analytical survey of processes and practices in the formulation of U.S. foreign policy, including an introduction to the goals, problems of implementation and current challenges faced by policy makers. Crosslisted as: POLI 363.

INTL 364. Vietnam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of U.S. involvement. The course will examine closely how and why the U.S. became involved in Vietnam and what impact the Vietnam War has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course also will consider additional topics including public opinion and the war, the relationship between the president and Congress in light of the war, and contemporary U.S. politics as a backlash against the political movements of the 1960s. Crosslisted as: POLI 364.

INTL 365. International Political Economy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances and others. Crosslisted as: POLI 365.

INTL 366. African Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of regional and/or cultural traditions of African literature with special attention paid to socio-political perspectives. Crosslisted as: AFAM 363/ENGL 363.

INTL 367. Caribbean Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: AFAM 365/ENGL 365.

INTL 368. Women and Global Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: GSW 366/POLI 366.

INTL 370. Studies in the Music of the African Continent and Diaspora. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: AFAM 350/MHIS 350.

INTL 372. Global Women's Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: GSW 372/RELS 372.

INTL 375. Interdisciplinary Methods for International Studies Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Survey course examining a range of humanistic and social scientific research methods used by international and global studies. This course equips students with the ability to generate unique, answerable and ethical research questions concerning world cultures, spaces and social formations. Data will be generated and analyzed through interviews, ethnography and participant observation, archival research, close reading, translation, discourse analysis, and action research. As a final product, students will produce a research proposal.

INTL 381. Modern Identities: Nation Building. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Critically explores how nation building and national identities have developed over the past two centuries among peoples across the globe. Class discussions will examine theoretical perceptions of these processes and focus on how they shaped and shape realities in different times and places. Crosslisted as: ANTH 381.

INTL 390. Historic and Ethnic Textiles. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 290 or IDES 446 or permission of instructor. An examination of the history of textile design and production around the world. Crosslisted as: FASH 390.

INTL 398. Directed Study Abroad. 8 Hours.

Semester course; variable hours. 0-8 credits per semester. May be repeated for a maximum of 8 credits with approval of student's major department. Permission of academic adviser required. A course involving travel and/or residence in a foreign country as features of the student's work on a pre-arranged project. Intended primarily for students participating in student exchange programs.

INTL 409. Modern Islamic Thought and Global Trends. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the integral relationship of Islam to major events of global concern and contextualizes these events into the wider modern and postmodern developments of Islamic thought and its intellectual and ideological self-interrogation. This course will provide students with the opportunity to study both the background of modern Islamic thought and selected contemporary events. Crosslisted as: RELS 409.

INTL 410. The Chinese Tradition in Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: PHIL 410/RELS 410.

INTL 412. Zen Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: PHIL 412/RELS 412.

INTL 415. Economic Anthropology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies. Crosslisted as: ANTH 415.

INTL 416. International Financial Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment. Crosslisted as: FIRE 316.

INTL 418. International Management. 3 Hours.

3 lecture hours. 3 credits. Prerequisite: junior standing. The study of the environment of international business, ethics and social responsibility in international settings, culture and its effect on behavior and management practice, and the strategies and management practices of firms engaged in international activities. Aims to provide students with the knowledge, skills and sensitivities needed to be effective managers in the international business environment. Crosslisted as: MGMT 418.

INTL 419. Doing Business in Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing and permission of instructor. Designed primarily as a core integrative course for students enrolled in the Certificate in International Management Studies, but other students are welcome. The course has three goals: a) integration of foreign languages, European studies and international management; b) infusion of other business areas relevant to doing business in Europe (such as international marketing, finance law and economics); and c) the development of cultural sensitivity and social responsibility. The course will be organized as a series of seminars with faculty and other speakers from the above disciplines. Crosslisted as: MGMT 419.

INTL 420. Women of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. This course looks at the traditional roles of women in African societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: AFAM 420/ANTH 420.

INTL 421. Civilization of Latin America II. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. This course explores the cultural diversity of Latin America and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity and on a specific area of Latin America. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: SPAN 421.

INTL 425. Religion, Magic and Witchcraft. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: RELS 425/ANTH 425.

INTL 441. Islamic Mysticism: the Sufis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the major Sufi masters and their works. It covers ideological and practical development of Islamic mysticism as compared to the developments within Islam itself. Crosslisted as: RELS 441.

INTL 446. International Human Resource Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331, INTL/MGMT 418 or ECON/INTL 329. Covers the application of human resource management activities in an international context. Highlights similarities and differences with domestic methods; current practices in the selection, development, compensation and maintenance of parent-country, host-country and third-country nationals; and the impact of regulatory and cultural differences between countries. Crosslisted as: MGMT 446.

INTL 448. Digital Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines Internet marketing as a necessary ingredient to successful worldwide marketing strategy. Students analyze markets using Web-based techniques for market evaluation, competitive analysis, market comparison and selection. Discussion includes comparison of e-business versus traditional business perspectives on marketing strategies and tactics. Crosslisted as: MKTG 448.

INTL 449. Religion, Globalization and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WRLD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the role religions are playing in the work of building a socially just and environmentally sustainable world community. Crosslisted as: RELS 450.

INTL 450. Francophone Literatures and Cultures. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisite: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Introduces students to the literatures and cultures of the Francophone world. Provides an overview of the Francophone world and an in-depth study of literary works written in French from Africa, the Caribbean, North America, Asia and Europe. Also explores the impact of Colonial history on Francophone literatures and cultures. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: FREN 450.

INTL 451. Religion, Racism and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WRLD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: RELS 451/AFAM 451.

INTL 452. The Politics of Developing Areas. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution and civil war. Crosslisted as: POLI 359.

INTL 453. Western Religions, Women and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: RELS 453/GSWS 453.

INTL 454. Cross-cultural Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: ENGL 454/ANTH 450.

INTL 455. Anthropology of Development and Globalization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL 101. May be taken for a maximum of nine credit hours in three different world areas. Consists of a global study of the developing Third World with particular emphasis on rural populations, subsistence farmers, indigenous groups and small entrepreneurs. Focuses on development and globalization while providing insights into the peasantry as a class, women in peasant societies, changes in peasant societies and the peasantry as a player in the policies of the modern state. Crosslisted as: ANTH 455.

INTL 456. Catholic Ethics and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 280 or 380, or RELS/INTL 312, or RELS 340/INTL 341; UNIV 200 or HONR 200. An exploration of the Catholic church's major theological, ethical, constitutional and strategic concerns, and an analysis of Catholic social teaching and its relation to current social issues such as abortion, peace and conflict, poverty, and human rights. Crosslisted as: RELS 455.

INTL 457. Comparative Perspectives on Cultures and Societies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103; UNIV 200 or HONR 200. Examination of the theoretical, methodological and ethical problems that arise from anthropological comparisons of cultures. Crosslisted as: ANTH 457.

INTL 460. Contemporary Issues in Middle Eastern and Islamic Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisites: INTL 201 and INTL/RELS 317 or permission of instructor. Provides advanced study and analysis of contemporary issues in Middle Eastern and Islamic studies.

INTL 465. Rethinking Globalization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL 101. Explores a variety of theories germane to the study, analysis and critique of globalization from an interdisciplinary perspective. Emphasis is placed on bringing different concepts and theoretical frameworks from across the humanities and social sciences into conversation and debate. Topics include challenges that have threatened the prospects of a globalized world from the early 1990s, the contemporary rethinking of globalization and the aspects of globalization that may be perceived as problematic.

INTL 468. Comparative National Security Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of national security policies and policy-making in a diverse set of nation-states. Emphasis is placed on comparing how threat perception, historical context, ideology, political structure and leadership impact national security policies of both powerful and weak nation-states. Crosslisted as: POLI 368.

INTL 480. China in Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Traces how China is making the transition from a planned to market economy, and what implications this transition has on the political, social and urban landscape. Class discussions are grounded on a basic understanding of China's modern history and regional geography. Crosslisted as: POLI 360.

INTL 490. Senior Capstone in International Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to students with senior standing in the international studies major who have a minimum of 85 credits earned toward the degree, including a minimum of nine credits earned within the respective concentration. An individualized research project focusing on international issues and undertaken in a capstone seminar setting.

INTL 491. Topics in International Studies. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. An in-depth study of a particular topic in international studies. See the Schedule of Classes for specific topics to be offered each semester.

INTL 492. Independent Study. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Maximum total of 4 credits in all independent study courses. Generally open to students of junior and senior standing who have acquired at least 12 credits in international studies courses. Determination of amount of credit and permission of instructor and director must be obtained before registration of the course.

INTL 493. International Studies Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of six credits, however only three credits can count toward the major concentration. Prerequisite: completion of nine credits of upper-level (300- or above) INTL concentration course work. Enrollment is restricted to international studies majors with junior or senior standing, and registration requires approval through the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced international studies major to gain workplace experience in internationally oriented public and private organizations and agencies.

INTL 499. Senior Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: completion of 18 INTL credits at the 300- or 400-level; senior standing. Pre- or corequisite: INTL 490, 492, or 493. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation and on the lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the international and area studies program.

Italian (ITAL)**ITAL 101. Beginning Italian I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Italian to take the placement test to determine eligibility. For students with no prior knowledge of Italian. Beginning grammar, reading, writing and oral skills.

ITAL 102. Beginning Italian II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

ITAL 201. Intermediate Italian I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Italian. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

ITAL 202. Intermediate Italian II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Italian. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

ITAL 205. Intermediate Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

ITAL 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 202, ITAL 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Italian. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

ITAL 320. Italian Cinema: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Prerequisite ITAL 202 or ITAL 205. Conducted in Italian. Examines Italian culture, history and society by exploring some of the most important genres, directors and actors in Italian cinema. See the Schedule of Classes for specific topic to be offered each semester.

ITAL 330. Themes in Italian Literature: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: ITAL 300. Conducted in Italian. An in-depth study of selected topics in Italian texts. See the Schedule of Classes for specific topic to be offered each semester.

ITAL 391. Topics in Italian. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 6 credits. Pre- or corequisite: ITAL 320 or ITAL 330. Conducted in Italian. An in-depth study of selected topics in Italian. See the Schedule of Classes for specific topics to be offered each semester.

Language and Cultural Competence (LGCC)**LGCC 101. Introduction to Language and Culture for Professionals I: ____ 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit with a different language. Designed for anyone concerned about the effectiveness of communicating with diverse linguistic communities. The communication focus includes an introduction to basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

LGCC 102. Introduction to Language and Culture for Professionals II: ____ 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit with a different language. Prerequisite: LGCC 101 or the equivalent. Designed for anyone concerned about the effectiveness of communicating with diverse linguistic communities. The communication focus includes continued practice with basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

LGCC 197. Basic Cultural Competence Training. 1-3 Hours.

Semester course; 1-3 hours. 1-3 credits. Designed for anyone concerned about the effectiveness of people working and living in multicultural societies. Bridges theory and practice through a series of hands-on exercises, simulations, stories and real-world examples to optimize the learners' skill development necessary for effective intercultural communication. Graded as pass/fail.

LGCC 201. Intermediate Language and Culture for Professionals I: ____ 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: LGCC 102 or the equivalent. Designed for anyone concerned about the effectiveness of communicating at an intermediate level with diverse linguistic communities. Delves further into grammatical structures, cultural concepts and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

LGCC 202. Intermediate Language and Culture for Professionals II: ____ 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: LGCC 201 or the equivalent. Designed for students concerned about the effectiveness of communicating at an advanced intermediate level with diverse linguistic communities. Offers continued instruction in cultural concepts, basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

LGCC 297. Cultural Competence for Health Care Professionals. 1-3 Hours.

Semester course; 1-3 hours. 1-3 credits. Designed for health care, social work, public health and related providers who work with the growing number of immigrants, refugees and minorities in the U.S. Focus is on the basics of intercultural-communication competence for health care settings to help health care providers build deeper knowledge and understanding of patients/clients' cultural values and beliefs and how they may influence clients' attitudes and behaviors. Graded as pass/fail.

LGCC 405. Spanish Language and Culture for Health Care Providers. 2 Hours.

I Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

LGCC 406. Spanish Language and Culture for Health Care Providers. 2 Hours.

II Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

LGCC 407. Spanish Language and Culture for Health Care Providers. 2 Hours.

III Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

Language Skills (LASK)**LASK 103. Introduction to Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological and historical aspects of languages. Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test. Crosslisted as: LING 103.

LASK 203. Classical Elements in the English Language. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Development of English vocabulary through a study of Greek and Latin elements in English: derivatives, roots and loan words. Some emphasis on the special vocabularies of the sciences.

Latin (LATN)**LATN 101. Beginning Latin I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Latin to take the placement test to determine eligibility. For students with no prior knowledge of Latin. Beginning grammar, reading and writing skills.

LATN 102. Beginning Latin II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: LATN 101 or the equivalent. Continuation of beginning grammar, reading and writing skills. Introduction to Latin authors and related aspects of Roman civilization.

LATN 201. Intermediate Latin I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: LATN 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers with emphasis on prose of Cicero, Pliny the Younger and Sallust.

LATN 202. Intermediate Latin II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: LATN 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers. Poetry, with selected readings from Catullus, Tibullus, Ovid and Vergil.

LATN 330. Themes in Latin Literature: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisites: LATN 202. An in-depth study of selected topics such as science and medicine, law, or satire in works by authors such as Caesar, Cicero, Horace, Catullus, Ovid, Virgil, Marcus Aurelius and Lucretius. See the Schedule of Classes for specific topic to be offered each semester. Texts are in the original language.

LATN 331. Representative Authors in Latin Literature: ____ 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisites: LATN 202. Selected readings by authors from the Archaic Period, the Classical Age, Silver Age and Patristic Latin with a focus on their impact on the political and social agendas of the day and on us today. See the Schedule of Classes for specific topic to be offered each semester. Texts are in the original language.

Linguistics (LING)**LING 103. Introduction to Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological and historical aspects of languages. Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test. Crosslisted as: LASK 103.

LING 390. Introduction to Linguistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. Crosslisted as: ENGL 390/ANTH 390.

LING 392. Language, Culture and Cognition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/ENGL 392/FRLG 328.

LING 402. Language Issues in the Spanish-speaking World. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking world. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: SPAN 402.

LING 450. Modern Grammar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Study of modern English grammar and usage with some attention to linguistic theory. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 450.

LING 451. History of the English Language. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. The historical development of the English language; etymology, morphology, orthography and semantics. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 451.

LING 452. Language and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of relationships between gender and language focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: GSWS 452/ ENGL 452.

LING 453. Modern Rhetoric. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of a broad range of modern rhetorical theories, emphasizing their possible relationships with linguistics, literary criticism, civic engagement and the process of writing. Crosslisted as: ENGL 453.

Mass Communications (MASC)**MASC 101. Mass Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comprehensive overview of mass media which examines its history and evolution. Emphasis is given to the ways in which communications technologies have shaped and are shaped by society. Considers how digital and earlier technologies have led to increasing integration of world cultures and economies. Includes discussion of mass media law and ethics, including the origins and evolution of a free press and the legal framework of contemporary mass media practice.

MASC 151. Global Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores how communication media and globalization drive each other and how they both impact the nation-state as well as international institutions. Examines how technology, the global economy and international media corporations influence culture, politics, business, law and other institutions in countries around the world. Explores the relationship between media systems and governments and how both are affected by technology and globalization. Crosslisted as: INTL 151.

MASC 201. Curiousness. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study and practice of the first attribute for success in creativity: curiosity. Students engage in practical applications, readings, lectures, demonstrations and in-class exercises that build curiosity and help students identify and trust their natural curious nature. Provides advertising and non-advertising majors with rigorous and provocative challenges to stimulate further interest in creating for media.

MASC 203. Journalism Writing. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101 minimum grade of C, UNIV 112 or both ENGL 295 and HONR 200 with minimum grade(s) of C, and minimum cumulative GPA of 2.5. Study and practice in fact gathering and development of basic writing skills for print, broadcast and online journalism. Focuses on journalistic storytelling, grammar, Associated Press style and knowledge of current affairs.

MASC 204. Story. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: MASC 101 minimum grade of C and 201 minimum grade of C, UNIV 112 or both ENGL 295 and HONR 200 with minimum grade(s) of C, and minimum cumulative GPA of 2.5. Focuses on writing for advertising and consumer communications (the best advertising tells stories to which consumers can relate). Students study the parts of a story, what makes a story interesting and how to find those things. Practice includes looking for, finding and constructing a story. A survey of many different ways storytelling is involved in making advertising. Practice in applying storytelling skills to several advertising and communication projects.

MASC 210. Public Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to public relations principles and practices, including analysis of tools, media, ethical responsibilities and emerging technologies. Special attention to the theory and research literature on rational and ethical persuasion.

MASC 251. Global Health and Social Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An online service-learning class in which students explore the theory and practice of social media campaigns for global health issues and develop projects for nonprofit clients. The class will explore the following issues: theories and concepts of social media campaigns about global health issues; practical application of social media in health campaigns; targeting online audiences through social media; utilization of multimedia content for social media; and organizational strategies for social media to achieve social benefits.

MASC 255. Introduction to Media Production. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Overview of media production history, evolution and contemporary impact domestically and internationally. Focuses on the development and review of appropriate technologies and media formats, the industries and businesses who use them, and how these technologies have been and are used to create and share various types of communication messages. Examines relevant global, economic and regulatory influences and forces.

MASC 261. History and Development of Journalism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C. An examination of the regulatory, technical, economic and creative foundations of print, broadcast and Web-based journalism. Historical, contemporary and ethical issues are also addressed.

MASC 274. Diversity in the Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C. Examines historical and contemporary issues associated with the presence and portrayal of selected groups in/by the media in the United States. Examines groups based on race, ethnicity, national origin, gender, sexual orientation, disability, religion and other characteristics. Issues related to diversity and diversity awareness in advertising, journalism and public relations are also explored.

MASC 285. Media Writing. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101 and MASC 255, each with a minimum grade of C; UNIV 112 or both ENGL 295 and HONR 200 with minimum grade(s) of C. Enrollment is restricted to mass communications majors with a minimum cumulative GPA of 2.5. Introduces students to various kinds of media writing, such as advertisements, training materials, and dramatic programming. Includes study and practice of content and styles of informational, persuasive and dramatic writing for various media platforms. Focuses on appropriate storytelling techniques, grammar and writing impact.

MASC 290. Ethical Problems in Mass Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 minimum grade of C. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision-making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice. Students are required to design and justify resolutions to the issues and present defenses for the resolution proposals.

MASC 291. Topics in Communications. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated once with different content. A study of a specialized topic in mass communications. See the Schedule of Classes for specific topics to be offered.

MASC 300. Technical Prowess. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 203, MASC 204 or MASC 285 with a minimum grade of C. Examines the functions of visual and graphic communication in the print and electronic media. Focuses on mastery of graphics software and basic design principles. Students gain hands-on experience with state-of-the-art computer graphics and layout programs.

MASC 301. Graphics for Journalism. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 203 with a minimum grade of C. For journalism students only. Examines the functions of visual and graphic communication in the print and electronic media. Focuses on creative typographic and layout design principles and integrates practice in editing, graphic creation, digital-image manipulation and professional publishing. Students gain hands-on experience with state-of-the-art computer graphics and layout programs used in newspaper and magazine journalism. (May not be taken if student has taken MASC 300 or 334.)

MASC 303. Reporting for Print and Web. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 203 minimum grade of C and UNIV 200 minimum grade of C or HONR 200 minimum grade of C. Detailed study in reporting and writing news stories for print publications and websites. Focus on interviewing, writing news and features and preparing for entry-level reporting assignments. Students also will learn online presentation skills, including photos, audio, video and interactive elements.

MASC 305. Copy Editing. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 301 minimum grade of C. Instruction and practice in basic newspaper and online editing with a focus on practical experience in editing local and news service copy for publication. Includes emphasis on headline writing, development of news judgment, accuracy and fairness, and potential legal problems for copy editors. Attention also will be paid to layout and design for newspapers and online.

MASC 317. Visual Acuteness. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300 with a minimum grade of C. Enrollment is restricted to advertising majors. Study and practice of visual problem-solving and graphic design. This course uses design thinking, conceptual thinking and process. Topics include building harmonious systems, using the typographic grid and understanding the relationship between type and image.

MASC 333. Public Relations Technical Writing and Media Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 203, MASC 210, and UNIV 200 or HONR 200, each with a minimum grade of C. Enrollment is restricted to public relations students. An intensive writing course that builds a practical foundation for writing in public relations. Establishes writing techniques and methods for message development, storytelling, persuasiveness and action. Includes development of organizational background and branding materials, community relations materials, and the creation of materials for key stakeholders in news media and other influencer media. Explains the value, role and function of mass communication channels, including a strategic approach to pitching, engaging and interviewing for mass media with a plan for monitoring and evaluating media mentions. Establishes a diverse writing portfolio.

MASC 334. Visual Communication and Design for Public Relations. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 203 and MASC 210, each with a minimum grade of C. Enrollment is restricted to public relations students or media studies minors. Provides hands-on experience with current graphic design software such as Adobe Illustrator, Photoshop and InDesign while building skills for concepting, developing and critiquing design projects for public relations. Explores theoretical and practical approaches to visual communication and message development. Exposes students to the language skills and empathy required to work with professional designers in the industry. Establishes a diverse portfolio of graphic design materials. (May not be taken if student has completed MASC 300 or MASC 301.)

MASC 335. Multimedia Production for Public Relations. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: ENGL 304, MASC 333, MASC 334 and MASC 337, each with a minimum grade of C. Enrollment is restricted to public relations students. Multimedia technology course used to advance the digital and practical skills devolved in MASC 333 and MASC 334. Explores current and innovative approaches to multimedia tools and technology used for public relations including, but not limited to, multimedia photography, video storytelling, webcasts and webinars, and subscriber engagement. Explores industry trends in digital, online and mobile communication. Establishes a diverse portfolio of multimedia projects. (May not be taken if student has completed MASC 300 or 301.)

MASC 336. Social Media for Public Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 304, MASC 333, MASC 334 and MASC 337, each with a minimum grade of C. Enrollment is restricted to public relations students. Covers development, trends and application of social media. Focuses on social media as a strategic tool for public relations professionals. Identifies and analyzes functionality and best practices, including audience engagement, benchmarking and appropriate metrics for social media monitoring, measurement and evaluation.

MASC 337. Public Relations Strategy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 203 and MASC 210, each with a minimum grade of C. Enrollment is restricted to public relations students. Teaches the strategic process for building public relations campaigns and other communication plans. Includes thorough instruction for setting goals, objectives, strategies and tactics. Establishes a method for measuring and evaluating effectiveness in public relations efforts supplemented by industry examples and case studies.

MASC 338. Public Relations Professionalism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 304, MASC 333, MASC 334 and MASC 337, each with a minimum grade of C. Enrollment is restricted to public relations students. Reinforces professionalism skills and career competencies for the public relations industry. Strengthens verbal and interpersonal skills used for pitching, presenting, influencing and engaging with audiences. Institutes a plan for employment supported by skillsets in networking, job-seeking and applying, interviewing, and relationship building. Explores options for public relations career paths, development opportunities, specializations and certifications. Establishes a diverse portfolio of public relations materials.

MASC 341. Feature and Article Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 303 minimum grade of C or 363 minimum grade of C. Practice in preparing articles and features for newspapers and magazines. Emphasis is on creative journalistic writing and development of writing skills.

MASC 344. Data Journalism and Visualization. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 203; and STAT 208 or STAT 210. Enrollment is restricted to mass communications majors. A practical guide to computer-assisted reporting and data-driven storytelling. Focus on finding authoritative sources and information on the internet, analyzing data with spreadsheets and other tools and creating online graphics. Students will learn how to evaluate the reliability of electronic information and how the First Amendment and journalism ethics apply to data.

MASC 359. International Media Coverage: The Middle East. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101 or MASC 151 with a minimum grade of C. This interdisciplinary course explores the media's role in covering cultural, political, religious and other issues in the Middle East. Students will examine the role and impact of the media in both the United States and Middle East in shaping global and regional public opinion. Using webcam and online technology, VCU students will discuss cross-cultural perspectives with students from the other U.S. universities and universities in the Middle East. Crosslisted as: WRLD 359.

MASC 363. Introduction to Broadcast Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 with a minimum grade of C. Corequisite: MASC 367. Students will concentrate on developing news writing and reporting skills for television and radio. Course work will include weekly writing assignments and the production of broadcast-quality radio and television stories. Knowledge of current events is essential.

MASC 367. Beginning Media Production. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 300 and UNIV 200, both with minimum grade of C. Enrollment is restricted to mass communications majors. Focuses on the purpose, function and execution of basic techniques of media production, especially for audio and video. Emphasizes production of professional-quality media content for various applications. Covers equipment, stages of production, recording and editing.

MASC 380. History of Advertising. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 or 204 with a minimum grade of C. A foundation survey, from prehistoric to present day. What is advertising? How did it get to be that way and what might it become? Advertising's place in society through several eras, with emphasis on U.S. advertising history, but attention also paid to the role of advertising in other countries. An overview of the creation of the ad agency, a summary of its parts, an explanation of its workings and its place in society. Understanding advertising as practiced from various viewpoints including the agency, public, clients and social and political groups.

MASC 381. Great Advertising. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. Explores the practitioner-oriented approach to the creation, preparation and evaluation of advertising, branding and communications. Views great advertising from the perspective of integrated marketing communication and utilizes case studies of advertising and branding campaigns for some of the world's best-known brands.

MASC 382. Acumen. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. Focuses on excelling in the business aspects of advertising, branding and communications. To understand an advertising client's business needs, one must understand how the client does business. Students will learn about advertising from within the context of marketing, business and commerce.

MASC 390. Ethical Problems in Mass Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203, MASC 204 or MASC 285 with a minimum grade of C. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision-making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice. Students are required to design and justify resolutions to the issues and present defenses for the resolution proposals.

MASC 392. Perspicuousness. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 204 with a minimum grade of C and UNIV 200 or HONR 200 with a minimum grade of C. Intensive practice in choosing the right word for the right occasion. Study of the different types of advertising copy used by both local and national advertisers. Focuses on creative thinking and inspired writing for advertising, branding and communications.

MASC 393. Creativity for Television. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. For mass communications majors only. Learn the process of developing professional-level television advertising with a concentration in creative thinking and solutions. Students create TV commercials with attention to scripts, storyboards, talent, visual composition, editing, music, sound effects and direction.

MASC 394. Imagination. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300 with a minimum grade of C. Study of art direction: practice in visualizing and utilizing media space aesthetically. Students complete assignments each week, ranging from traditional advertising to alternative media venues. Results are presented in front of the class for critique by faculty and fellow students.

MASC 396. Mobile and Social Media Journalism. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 303 with minimum grade of C. Integrates journalism skills and concepts from previous writing and reporting classes and adapts them to mobile and social media. Students work in a newsroom environment to utilize mobile devices and social media platforms to identify compelling story ideas, effectively break news and report on important news events and issues while applying theories and concepts of social networking to journalism. Students explore emerging technologies, develop their own professional social media portfolios and build digital communities.

MASC 397. Ubiquity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 minimum grade of C. Using media to help achieve the client's ad objective. An intensive problem-based course on using mass, personal and social media to engage the consumer, to help communicate the brand's message and to add impact to a communications campaign. Students will study media planning and buying of all types of media (TV, radio, newspapers, magazines, outdoor, online and nontraditional).

MASC 398. Awareness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 with a minimum grade of C. Understanding what advertisers can look for in their research and how they use research to connect with consumers. Through this intensive research practicum focused on account planning, students will learn to research consumers, competition and brands. Students will use quantitative (such as online surveys) and qualitative (such as focus groups, panel studies, one-on-one interviews) methods to research consumers and target audiences. Students will conduct competitive market research on brands.

MASC 399. Empathy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 with a minimum grade of C. Focuses on managing client accounts, team management, group dynamics, negotiating and presentation skills. Students learn how to persuade through understanding of others, including how to make smarter decisions, spark innovation and solve problems more quickly, and how to create a culture of candor, trust, resilience and accountability in clients and in coworkers.

MASC 403. Advanced Reporting. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 274 and MASC 303, both with a minimum grade of C. Enrollment is restricted to mass communications majors. Capstone course for journalism/print-online concentration. Intensive study of the techniques of reporting meetings and news of public affairs. Attention will be paid to covering governmental agencies at all levels. Instruction in newspaper editing included. Quality of writing will be a paramount and continual consideration. Emphasis on fast-paced deadlines. This course may not be taken simultaneously with MASC 404, MASC 475 or MASC 496 without permission from the instructor.

MASC 404. Specialized Project Reporting. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 274 and MASC 303, both with a minimum grade of C. Enrollment is restricted to mass communications majors. Capstone course for journalism/print-online concentration. Provides news beat experience for students reporting on complex issues facing the public in the urban community. Emphasis also on editing, team reporting, in-depth research and interviewing techniques, and use of public records. This course may not be taken simultaneously with MASC 403, MASC 475 or MASC 496 without permission from the instructor.

MASC 408. Communications Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203, MASC 204 or MASC 285 with a minimum grade of C. Study of legal issues affecting the practice of advertising, journalism and public relations. Examination and analysis of contemporary issues and problems in conventional and new media. Critical and unresolved issues are discussed within the legal framework of modern mass media practice.

MASC 409. Truth and Honor. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 204 minimum grade of C and 380 minimum grade of C. For mass communications majors only. A survey of laws pertaining to the creation of advertising, such as trademark and copyright, and to the effects of advertising in the culture. A discussion of ethical questions pertaining to persuasion, communication and the effects of advertising in the culture.

MASC 415. Advanced Media Production. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 367 with a minimum grade of C. Study and practice of advanced media production skills and techniques. Focuses on audio and video production for visual storytelling, including advanced professional field production, camera operation and media editing.

MASC 423. Tourism and Hospitality Public Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 and MASC 210, each with a minimum grade of C. Enrollment restricted to public relations students. Examines the role and practice of public relations in the tourism and hospitality industries. Students will learn how to use public relations strategies and tactics to stimulate interest among travelers in destinations and specific activities. Emphasis on media relations, special events, sponsorships/partnerships and social media.

MASC 424. Sports and Entertainment Public Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 and MASC 210, each with a minimum grade of C. Enrollment restricted to public relations students. Examines the role and practice of public relations in the sports and entertainment industries. Students will learn the role of public relations in managing relationships with the news media, fans and fan groups, and other key audiences. Focus on media relations, social media, sponsorships/partnerships, promotions and community relations.

MASC 425. Public Relations Research Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 208 or STAT 210; MASC 335, MASC 336 and MASC 337, each with a minimum grade of C. Enrollment is restricted to public relations students. An introduction to the role of research in public relations, with primary emphasis on content analysis, focus group, survey and communication audit methods, and the evaluation of quantitative research data.

MASC 426. Influencer Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 333 and MASC 336, each with minimum grade of C for public relations students; MASC 392 or MASC 398 with a minimum grade of C for advertising students. Enrollment is restricted to public relations and advertising students. Explores the evolution and impact of online influencers such as bloggers, vloggers, reviewers and critics and their ability to affect audience decision-making. Presents strategies and best practices for identifying and cultivating strategic relationships with these influencers, as well as how to apply their influence to a larger communication strategy. Students will learn to leverage the influencer framework to generate better content and more subscribers for clients and organizations.

MASC 433. Special Events. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 and MASC 210, each with a minimum grade of C. Enrollment restricted to public relations students only. Students learn the theory and organizational strategies of special events as a function of public relations. Topics include client consulting, objective setting, budgeting, sponsorships, vendor negotiations and follow-up procedures.

MASC 435. Crisis Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 333, MASC 334 and MASC 337, each with a minimum grade of C. Enrollment is restricted to public relations students. Students learn techniques for dealing with sudden and unexpected situations that have a negative impact on organizations and their images to key constituencies. Through case studies and crisis simulation exercises, students develop strategic solutions for crisis situations. Students are provided with the insights, confidence and practical expertise needed to manage the consequences of a wide range of possible crises in ways that maintain, or even enhance, their employer's reputation.

MASC 438. Organizational Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 425 with a minimum grade of C. Enrollment restricted to public relations students only. Focuses on the tools to communicate with employees, volunteers and special organizational internal publics, and how those internal messages are used to achieve the goals and objectives of organizations. Students learn the theories of organizational communication and the techniques used to conduct an internal audit of the communication climate in an organization.

MASC 439. Agency. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 333, MASC 335, MASC 336, MASC 337, MASC 425 and MASC 499, each with a minimum grade of C. Corequisite: MASC 274. Enrollment is restricted to public relations students. Fast-paced, professionally driven course where students take the lead to fulfill the public relations needs of clients in the community. Working from the first class through the end of the semester, students apply theoretical and practical skillsets learned in the program to perform research, strategic plan development, tactical design and execution. Assesses students' theoretical and practical learning achieved in the program as a capstone course concluding with a final presentation for critical feedback by the client(s) and other industry professionals.

MASC 440. Media Animation. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300 with a minimum grade of C. Enrollment is restricted to mass communications majors. Study and practice of media animation, including physical (e.g., puppets and claymation) and digital creations. Focus on development and current applications of the art form and demonstrating basic digital media animation competency through class projects.

MASC 450. Style. 3 Hours.

Semester course; 3 lecture hours. 3-3 credits. Prerequisites: MASC 392 and 394, both with a minimum grade of C. For mass communications majors only. An advanced, intensive study of advertising style, forming one's own sense of style and the creative process. Emphasizing strategic and creative development of advertising campaigns. Students will conceptualize advertising campaigns, execute digitally produced, comprehensive advertisements and campaign materials, and assemble a final portfolio. Culminates in a formal portfolio review with professionals from the advertising industry.

MASC 451. Invention. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 274 and MASC 450, both with a minimum grade of C. Enrollment is restricted to mass communications majors. An advanced, intensive study of inventiveness in the creative process. Emphasis on strategic and creative development of advertising campaigns that builds on what students learned about advertising style in MASC 450. Prepares students for post-graduate work or study. Students will conceptualize and produce advertising campaigns and assemble a final portfolio. Culminates in a formal portfolio review with professionals from the advertising industry.

MASC 459. Judgment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 274, MASC 398, MASC 399 and six additional credits of MASC electives, each with minimum grades of C. Enrollment is restricted to mass communications majors. Application and demonstration of inspiration, innovation, advertising knowledge and skills. Designed to help students in the strategic concentration compile a strong, comprehensive body of work used in brand communications. Students will develop competence in evaluating communication concepts, market situations and client and agency concerns.

MASC 460. Advanced Television Newsgathering. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 363 and 367, both with minimum grade of C. Corequisite: MASC 415. Television news practicum. Using the university and the city of Richmond as their classroom, students will report, write and produce television and multimedia news stories. Electronic newsgathering and editing equipment will be utilized to create professional-caliber projects.

MASC 461. The Documentary. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 274, MASC 303, MASC 415 and MASC 460, each with a minimum grade of C. An examination of documentary concepts through analysis of radio, television and film documentaries. The course will center on the development, writing and production of a documentary in the medium (audio or video) of the student's choice.

MASC 462. Photojournalism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 363 minimum grade of C and 367 minimum grade of C. Examination of theoretical, technical and practical use of photography in communications and reporting, along with theories and legal guidelines of photojournalism. Training in news photography (both still and video) and its application in converged media. Students must have their own manually operable 35 mm film or digital (minimum 3.2 megapixels) single lens reflex cameras with at least a 50 mm lens or a zoom lens capable of 50 mm shooting. Students will use departmental video cameras.

MASC 463. Advanced Radio Newsgathering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 363 minimum grade of C and 367 minimum grade of C. Radio practicum. Using the university and city of Richmond as their classroom, students will report, write and produce radio news stories. Studio and remote equipment will be utilized to create professional-caliber projects.

MASC 465. Newscasting. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. May be repeated once for a total of six credits. Prerequisites: MASC 274, MASC 303, MASC 415 and MASC 460, each with minimum grade of C. Concentrates on developing on-air skills in radio and television studio and field situations. Emphasizes journalistic principles in delivery of news, public affairs, editorial and interviews. Stresses grammar, diction and broadcast writing.

MASC 466. Television Studio Production. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: MASC 203, MASC 204 or MASC 285 with minimum grade of C. Instruction and practice in basic television and studio production. Explores standards, contemporary technologies and best-practice techniques for modern studio video production.

MASC 467. Nonprofit Project Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C or MASC 380 with a minimum grade of C. Students will be selected to work with area nonprofit clients to create and produce a wide variety of advertising and promotional materials. Students will develop strategy, write creative briefs, recruit teams to work with them during CreateAthon on Campus (a 24-hour creative event held during Spring Break), present work to clients and follow any deliverables through production. Strong emphasis on leadership and a commitment to working with nonprofits.

MASC 474. Diversity in the Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C. Enrollment restricted to mass communications majors and media studies minors. Examines historical and contemporary issues associated with the presence and portrayal of selected groups in/by the media in the United States. Examines groups based on race, ethnicity, national origin, gender, sexual orientation, disability, religion and other characteristics. Issues related to diversity and diversity awareness in advertising, journalism and public relations are also explored.

MASC 475. Capital News Service. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. Prerequisites: MASC 274 and MASC 303, both with a minimum grade of C. Enrollment is restricted to mass communications majors. Capstone course for journalism/print-online concentration. Advanced journalism students cover state government and politics, including the Virginia General Assembly, the governor, regulatory agencies and elections. Students produce content for publication by newspapers and other news outlets and for social media. Strong emphasis on fast-paced deadlines. This course may not be taken simultaneously with MASC 403, MASC 404 or MASC 496 without permission from the instructor.

MASC 480. Touch. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 398 minimum grade of C and 399 minimum grade of C. For mass communications majors only. Designing advertising strategies that touch the target audience and engage them in the brand. Students learn to understand the research, the consumer, the competition and the client's brand so that they can develop a strong communication strategy. This is an advanced study of the strategic side of advertising.

MASC 481. Completeness. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: creative advertising concentration: MASC 392 and 394, both with minimum grade of C; strategic advertising concentration: MASC 398 and 399, both with minimum grade of C. For mass communications majors only. Intensive study in the planning and preparation of advertising campaigns. Students develop complete advertising plans including research, media and creative strategies, sales promotion plans and merchandising plans.

MASC 484. Media Foundry. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. May be repeated for a maximum of six credits with different topics. Prerequisites: MASC 274, MASC 338, MASC 415 and MASC 440, each with a minimum grade of C. Enrollment is restricted to mass communications majors. Capstone course. Advanced application of perspectives and skills learned about developing stories and creating compelling media production portfolio content for various audiences.

MASC 485. Web Site Design. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300, 301 or 334 with a minimum grade of C. Students will receive an introduction to the processes, principles and tools of website design, development and production. The course will focus on the development of strong interactive interfaces, animation, graphic images, text, and functional site design and organization. In this hands-on, computer-based course, students will design and develop a comprehensive site and launch it to the Internet. Increasing the students' knowledge of design principles and technical skills with Web development tools will be emphasized.

MASC 488. Strategic Health Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 336 with a minimum grade of C. Enrollment is restricted to public relations students. Covers the design, implementation and evaluation of health-focused media campaigns, and examines behavioral theories and research on media influences with respect to both beneficial and harmful effects on well-being. Students will focus on effective message design as well as responding to emerging viral conversations, translating health communication language into language accessible for the public and designing a digital media-based health communication campaign for an actual client.

MASC 491. Topics in Communications. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated with different topics for a maximum of 9 credits. Prerequisite: MASC 203 or 204, either with a minimum grade of C. An intensive study of a specialized field of mass communications.

MASC 492. Independent Study. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses. Prerequisite: MASC 203 or 204 with a minimum grade of C. The course is designed for students who wish to study subject matter not offered elsewhere in the mass communications' curriculum.

MASC 493. Fieldwork/Internship. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated with different topics; maximum total of 6 credits may be applied toward graduation. Prerequisites: MASC 203 or 204, either with a minimum grade of C, and permission of internship coordinator. Selected students will receive on-the-job training under the supervision of an instructor and the employer. Internships are available in newspapers, magazines, public relations, advertising, radio and television.

MASC 496. Mobile and Social Media Journalism. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 303, 363 and 367, each with minimum grade of C. Capstone course for print-online journalism students. Integrates journalism skills and concepts from previous writing and reporting classes and adapts them to mobile and social media. Students work in a newsroom environment to utilize mobile devices and social media platforms to identify compelling story ideas, effectively break news and report on important news events and issues while applying theories and concepts of online social networking to journalism. Students develop their own professional social media portfolios and build online communities. This course may not be taken simultaneously with MASC 403, MASC 404 or MASC 475 without permission from the instructor.

MASC 499. Career Minded. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 398 and MASC 399, each with a minimum grade of C; or MASC 392 and MASC 394, each with a minimum grade of C; or ENGL 304, MASC 333, MASC 334 and MASC 337, each with a minimum grade of C; or MASC 303 with a minimum grade of C. Study of career options and expectations. Development of career skills such as networking, interviewing and salary negotiations. Creation of career materials such as career plan and resume.

Mathematics (MATH)**MATH 001. Elementary Algebra. 0 Hours.**

Semester course; 3 lecture or 3 laboratory/tutorial hours. No credit. Prerequisite: permission of the department chair. The purpose of this course is to provide laboratory and tutorial instruction for those seeking remediation or review of high school algebra. Topics include basic properties of real numbers, operations with algebraic expressions, solution of equations and inequalities, exponents and radicals, introduction to functions and graphing.

MATH 120. Seeing, Playing, Deciding – This is Math?. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will learn about the beautiful and often surprising interactions between mathematics and three broad areas: the visual arts, games and public policy. Representative topics include perspective in the visual arts; tessellations; origami; games and strategies in recreational settings and in the social and natural sciences; the often hidden mathematics behind public policy; and assessing quantitative claims in the public arena.

MATH 121. Perspective Geometry. 1 Hour.

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which Renaissance artists who developed linear perspective in geometry in order to paint scenes realistically influenced the development of mathematics and geometry. Topics covered will include the foundations of projective geometry. Pascal's mystic hexagram, Brianchon's Theorem and duality. A need for higher mathematics will also be introduced and explained. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

MATH 122. Tessellations. 1 Hour.

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which mathematics is rooted in both natural philosophy and art by examining tiling theory. Course topics include Penrose tilings, symmetries and various other tessellations. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

MATH 123. Visualization. 1 Hour.

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which mathematics has been visualized artistically and will develop their own way to express a mathematical idea. Topics covered will include fractals, knots, minimal surfaces, non-Euclidean geometry and the fourth dimension. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

MATH 129. Introduction to College Algebra. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study in algebraic functions through graphical, numerical, symbolic and verbal representations. Topics include the exploration of linear, quadratic, polynomial, exponential and logarithmic functions. Real-world applications and the development of algebra skills are an integral part of the course. This course will not satisfy any general education requirements. Students may receive credit toward graduation for only one of MATH 129 and MATH 141.

MATH 131. Introduction to Contemporary Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Topics include optimization problems, data handling, growth and symmetry, and mathematics with applications in areas of social choice. Major emphasis is on the process of taking a real-world situation, converting the situation to an abstract modeling problem, solving the problem and applying what is learned to the original situation. Does not serve as a prerequisite for MATH 151 or other advanced mathematical sciences courses.

MATH 139. College Algebra with Applications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 129 with a minimum grade of C or placement through the VCU Math Placement Test within the one-year period immediately preceding the beginning of the course. An in-depth exploration of the characteristics, graphs and applications of linear, exponential, logarithmic and power functions. Topics include fundamental concepts of functions, including but not limited to transformations, inverses, arithmetic operations and composition. Opportunities to investigate, analyze and communicate findings from real-world scenarios will be supported by the use of technology. Students may receive credit toward graduation for only one of MATH 139 and MATH 141.

MATH 141. Algebra with Applications. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: one year of high school algebra and satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Topics include concepts and applications of linear, exponential, logarithmic, power and quadratic functions; graphing; transformations and inverses of functions; algebra and composition of functions. Students may not receive credit toward graduation for both MATH 141 and either MATH 129 or MATH 139.

MATH 151. Precalculus Mathematics. 4 Hours.

Semester course; 3 lecture and 1 mathematics laboratory/recitation hours. 4 credits. Prerequisite: MATH 139 or MATH 141 with a minimum grade of C, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Concepts and applications of algebra and trigonometry. Topics include graphics, transformations and inverses of functions; linear, exponential, logarithmic, power, polynomial, rational and trigonometric functions.

MATH 191. Topics in Mathematics. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. For a course to meet the general education requirements it must be stated in the Schedule of Classes. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

MATH 200. Calculus with Analytic Geometry I. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: MATH 151 with a minimum grade of C or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Limits, continuity, derivatives, differentials, antiderivatives and definite integrals.

MATH 201. Calculus with Analytic Geometry II. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: MATH 200 with a minimum grade of C. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

MATH 211. Mathematical Structures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151, MATH 200, MATH 201 or BUSN 212* with a minimum grade of C, or calculus-level placement on the VCU Mathematics Placement Test within the one-year period immediately preceding enrollment in the course. An alternative prerequisite course may be approved at the discretion of the academic adviser. An introduction to mathematical logic and set theory, including applications in Boolean algebras and graph theory. *Previously MGMT 212, SCMA 212.

MATH 230. Mathematics in Civilization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. For Honors College students only. The growth, development and far-reaching applications of trigonometry, navigation, cartography, logarithms and algebra through ancient, medieval, post-Renaissance and modern times are explored. Will include methods to solve mathematical problems using various historical procedures and will involve collaboration through group projects.

MATH 255. Introduction to Computational Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. (A core course for mathematics/applied mathematics majors.) An introduction to computer algebra systems (CAS) and their use in mathematical, scientific and engineering investigations/computations. Introductory mathematical computer programming using a CAS, including implementation of problem-specific algorithms.

MATH 291. Topics in Mathematics. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

MATH 300. Introduction to Mathematical Reasoning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. (A core course for mathematics/applied mathematics majors.) An introduction to basic concepts of mathematical reasoning and the writing of proofs in an elementary setting. Direct, indirect and induction proofs. Illustrations of the concepts include basic proofs from mathematical logic, elementary set theory, elementary number theory, number systems, foundations of calculus, relations, equivalence relations, functions and counting with emphasis on combinatorial proofs.

MATH 301. Differential Equations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. Solutions of ordinary differential equations of first order. Solutions of higher order linear differential equations with constant coefficients and variable coefficients by the methods of undetermined coefficients and variation of parameters, solutions by Laplace transforms and applications.

MATH 302. Numerical Calculus. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 255 (or knowledge of a programming language/mathematical software package) and MATH 201, each with a minimum grade of C, or permission of the instructor. An introduction to numerical algorithms for solving systems of linear equations, finding zeroes, numerical differentiation and definite integration, optimization.

MATH 303. Investigations in Geometry. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MATH 361 with a minimum grade of C. Enrollment is restricted to students majoring in the liberal studies for early and elementary education in the Bachelor of Interdisciplinary Studies program. A study of topics in Euclidean geometry to include congruence, similarity, measurement, coordinate geometry, symmetry and transformation in both two and three dimensions. These topics will be investigated using manipulatives and computer software.

MATH 305. Elementary Number Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300 with a minimum grade of C. Divisibility, congruences, Euler phi-function, Fermat's Theorem, primitive roots, Diophantine equations.

MATH 307. Multivariate Calculus. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: MATH 201 with a minimum grade of C. The calculus of vector-valued functions and of functions of more than one variable. Partial derivatives, multiple integrals, line integrals, surface integrals and curvilinear coordinates. Lagrange multipliers; theorems of Green, Gauss and Stokes. Applications.

MATH 310. Linear Algebra. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. Systems of linear equations, vector spaces, linear dependence, bases, dimensions, linear mappings, matrices, determinants, quadratic forms, orthogonal reduction to diagonal form, eigenvalues and geometric applications.

MATH 350. Introductory Combinatorics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to basic combinatorial concepts such as combinations, permutations, binomial coefficients, Fibonacci numbers and Pascal's triangle; basic theorems such as the pigeonhole principle and Newton's binomial theorem; algorithms such as bubble sort and quicksort; and discussion of basic applications such as chessboard problems, combinatorial games, magic squares and Latin squares.

MATH 351. Applied Abstract Algebra. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300 with a minimum grade of C. A survey of several areas in applied abstract algebra which have applications in computer science such as groups, codes, matrix algebra, finite fields and advanced graph theory.

MATH 353. Experimental Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to a mathematical computing package, computer manipulation of lists and sets, and symbolic computing. Numerical computation will be used to investigate mathematical objects, such as integers, prime numbers, graphs, matrices and to identify properties and patterns among these objects. Random methods will be used to explore properties and patterns in long sequences and large collections.

MATH 356. Graphs and Algorithms. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to basic graph theoretic concepts such as trees, colorings and matchings; basic theorems such as the handshaking lemma and the Gallai identities; algorithms such as Dijkstra's and Kruskal's; and discussion of famous open problems such as finding shortest tours for a traveling salesman.

MATH 361. Numbers and Operations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: TEDU 101 with a minimum grade of C; and either MATH 131 with a minimum grade of C or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Ways of representing numbers, relationships between numbers, number systems, the meanings of operations and how they relate to one another, and computation within the number systems as a foundation for algebra. Structured observations and tutoring of elementary-level students. Restricted to students majoring in the liberal studies concentration for early and elementary education in the Bachelor of Interdisciplinary Studies program.

MATH 362. Algebra and Functions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 361 with a minimum grade of C. Topics include algebraic concepts, linear, quadratic, exponential, logarithmic, trigonometric functions including graphical modeling of physical phenomena. Attention will be given to the use of graphing technology, the transition from arithmetic to algebra, working with quantitative change, and the description and prediction of change. Structured observations and tutoring of elementary-level students. Restricted to B.I.S. students in the liberal studies for early and elementary education concentration.

MATH 380. Introduction to Mathematical Biology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: MATH 200 and BIOL 151, both with a minimum grade of C, or permission of instructor. An introduction to mathematical biology. Various mathematical modeling tools will be covered and implemented in a range of biological areas. Additionally, the collaborative research process will be presented and discussed. Crosslisted as: BNFO 380.

MATH 391. Topics in Mathematics. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

MATH 401. Introduction to Abstract Algebra. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300 and MATH 310, each with a minimum grade of C. An introduction to groups, rings and fields from an axiomatic point of view. Coset decomposition and basic morphisms.

MATH 404. Algebraic Structures and Functions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300 and MATH 310, each with a minimum grade of C; one additional mathematical sciences course; and permission of instructor. Semigroups, groups, rings, integral domains and fields. Exponential, logarithmic and trigonometric functions. Graphing in parametric and polar coordinates. Arithmetic and geometric sequences and series.

MATH 407. Advanced Calculus. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300 with a minimum grade of C. Theoretical aspects of calculus. Topics include properties of real numbers, countable and uncountable sets, sequences and series, limits, continuity, derivatives, and Riemann integration.

MATH 409. General Topology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 407 with a minimum grade of C. Foundations and fundamental concepts of point-set topology. Topological spaces, continuity, convergence, connected sets, compactness, product spaces, quotient spaces, function spaces, separation properties.

MATH 415. Numerical Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 255, MATH 301 and MATH 310, each with a minimum grade of C. Numerical methods for interpolation, solving systems of linear equations and initial value problems (ordinary differential equations) and the exploration of computational error.

MATH 427. Excursions in Analysis: Real. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310 and MATH 407, each with a minimum grade of C. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from real analysis.

MATH 428. Excursions in Analysis: Complex. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310 and MATH 407, each with a minimum grade of C. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from complex analysis.

MATH 429. Excursions in Analysis: Applied. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 407, each with a minimum grade of C. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from applied analysis.

MATH 430. The History of Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 307, MATH 310, and either MATH 301 or OPER 327, all with a minimum grade of C. Surveys major trends in the development of mathematics from ancient times through the 19th century and considers the cultural and social contexts of mathematical activity.

MATH 431. Expositions in Modern Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 307, MATH 310, and either MATH 301 or OPER 327, all with a minimum grade of C. Descriptively studies several major ideas relevant to present-day mathematics, such as the advent of pure abstraction, difficulties in the logical foundations of mathematics, the impact of mathematics and statistics in the 20th century and the computer revolution.

MATH 432. Ordinary Differential Equations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Existence and uniqueness of solutions, linearization and stability analysis, Lyapunov stability theory, periodic solutions, and bifurcations. Applications and simulations are emphasized.

MATH 433. Partial Differential Equations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Parabolic (heat), hyperbolic (wave) and elliptic (steady-state) partial differential equations are studied. Solution techniques such as separation of variables, reflection methods, integral transform methods and numerical methods are demonstrated. Practical problems and applications are emphasized.

MATH 434. Discrete Dynamical Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Theory and applications of difference equations including existence and uniqueness of solutions, linearization and stability, periodic solutions, and bifurcations.

MATH 435. Mathematical and Computational Modeling. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and MATH 310, each with minimum grade of C. Focuses on general mathematical modeling principles. A variety of application areas are explored through a complete model development cycle. This process involves the theoretical development of a mathematical model, implementation of a computational solution and exploration of the solution within the context of the application area.

MATH 454. Using Technology in the Teaching of Mathematics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MATH 200 and STAT 212, each with a minimum grade of C; six additional credits in the mathematical sciences; and permission of the instructor. Using graphing calculators, calculator-based labs and computer software packages in teaching topics in algebra, geometry, trigonometry, statistics, finance and calculus.

MATH 480. Methods of Applied Mathematics for the Life Sciences: Discrete. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of discrete dynamical system models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the models and to further explore the biological phenomena.

MATH 481. Methods of Applied Mathematics for the Life Sciences: ODE. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of ordinary differential equation models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the models and to further explore the biological phenomena.

MATH 482. Methods of Applied Mathematics for the Life Sciences: PDE. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of partial differential equation models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the model and to further explore the biological phenomena.

MATH 490. Mathematical Expositions. 3 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: UNIV 200 or HONR 200 with a minimum grade of C. Restricted to seniors in mathematical sciences with at least 85 credit hours taken toward the degree. Required for all majors in the Department of Mathematics and Applied Mathematics. A senior capstone course in the major designed to help students attain proficiency in expository mathematical writing and oral presentation, which require the efficient and effective use of mathematics and the English language. Students will learn a variety of topics in mathematics, write reviews of selected award-winning mathematics papers and write a senior paper.

MATH 492. Independent Study. 1-4 Hours.

Semester course; variable hours. 1-4 credits. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

MATH 493. Mathematical Sciences Internship. 3 Hours.

Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Mathematical sciences majors only with junior or senior standing. Admission by permission from the department chair. Through placement in a position in business, industry, government or the university, the student will serve as an intern in order to obtain a broader knowledge of the mathematical sciences and their applications.

Military Sciences (MILS)**MILS 101. Military Science and Leadership: Introduction to the Army. 1 Hour.**

Semester course; 1 lecture and 1 laboratory hour. 1 credit. Introduces students to fundamental components of service as an officer in the U.S. Army. Forms building blocks of progressive lessons in values, fitness, leadership and officership. Also addresses "life skills" including communications theory and practice (written and oral) and interpersonal relationships.

MILS 102. Military Science and Leadership: Foundations of Agile and Adaptive Leadership. 1 Hour.

Semester course; 1 lecture and 1 laboratory hour. 1 credit. Introduces students to "life skills" of problem-solving, decision-making and leadership. Designed to help students be more effective as leaders, both immediately on campus and in the long term in either military or civilian life. Introduces students to fundamental officer skills such as map reading, land navigation, tactics and leadership values/actions. Using these basic skills, students will build a rudimentary understanding of the core competencies necessary to become an Army officer and leader.

MILS 201. Military Science and Leadership: Leadership and Decision Making. 2 Hours.

Semester course; 2 lecture and 1 laboratory hours. 2 credits. Prerequisites: MILS 101 and MILS 102 or permission of department chair. Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework. Aspects of personal motivation and team building are practiced by planning, executing and assessing team exercises, and by participating in leadership labs. The course continues to develop knowledge of leadership values and attributes through understanding Army rank, structure and duties as well as broadening knowledge of land navigation and squad tactics. Case studies provide a tangible context for learning the Soldiers Creed and Warrior Ethos as they apply in the contemporary operating environment.

MILS 202. Military Science and Leadership: Army Doctrine and Team Development. 2 Hours.

Semester course; 2 lecture and 1 laboratory hours. 2 credits. Prerequisite: MILS 201 or permission of department chair. Examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). Highlights dimensions of terrain analysis, patrolling and operation orders. Continued study of the theoretical basis of the Army leadership framework explores the dynamics of adaptive leadership in the context of military operations. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team-building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios.

MILS 203. Military Science and Leadership: Leader's Training Course. 6 Hours.

0-6 credits. Prerequisites: enrollment in the ROTC program, military service obligation and permission of department chair. Five-week summer course consisting of leadership training at Fort Knox, Ky. Completion of this course equates to completion of MILS 101, 102, 201 and 202, and enables students to enroll in the advanced military leadership courses. Amount of academic credit awarded depends upon amount of basic military science credit previously earned. Travel pay and salary provided through Department of Military Science and Leadership. Graded pass/fail.

MILS 301. Military Science and Leadership: Training Management and the Warfighting Function. 3 Hours.

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: MILS 101, MILS 102, MILS 201 and MILS 202 (or MILS 203), permission of department chair and military service obligation. Challenges cadets to study, practice and evaluate adaptive team leadership skills as they are presented with the demands of the ROTC Leader Development and Assessment Course. Challenging scenarios related to small unit tactical operations are used to develop self-awareness and critical thinking skills. Cadets receive systematic and specific feedback on leadership abilities.

MILS 302. Military Science and Leadership: Applied Leadership in Small Unit Operations. 3 Hours.

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisite: MILS 301 or permission of department chair. Provides instruction and case studies that build upon leadership competencies and military skills attained in MILS 301 in preparation for future responsibilities as Army officers. Specific instruction is given in individual leader development, planning and execution of small unit operations, individual and team development, and the Army as a career choice.

MILS 306. Military Science. 0 Hours.

0 credit. Prerequisite: MILS 302 and successful completion of four basic military science courses or MILS 203 Basic Military Science for six credits. ROTC National Advanced Leadership Camp. The ROTC camp summer practicum is six weeks long. Individual and group experience for application of leadership training. Exposure to leadership situations that require decisions made under physical and mental stress conditions.

MILS 401. Military Science and Leadership: The Army Officer. 3 Hours.

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisite: MILS 302 or permission of department chair. Develops student proficiency in planning, executing and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Cadets are given situational opportunities to assess risk, make ethical decisions and lead fellow ROTC cadets. Lessons on military justice and personnel processes prepare cadets to make the transition to becoming Army officers. MS IV (senior) cadets lead lower-level cadets. Both classroom and battalion leadership experiences are designed to prepare MS IV cadets for their first unit of assignment. Cadets identify responsibilities of key staff, coordinate staff roles and use battalion operations situations to teach, train and develop subordinates.

MILS 402. Military Science and Leadership: Company Grade Leadership. 3 Hours.

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: MILS 301, MILS 302 and MILS 401, or permission of department chair. Explores the dynamics of leading in the complex situations of current military operations in the contemporary operating environment. Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Cadets also explore aspects of interacting with non-government organizations, civilians on the battlefield and host nation support. Course places significant emphasis on preparing cadets for Basic Officer Leadership courses and their first unit of assignment. Utilizes case studies, scenarios and "What now, Lieutenant?" exercises to prepare cadets to face the complex ethical and practical demands of leading as a commissioned officer in the U.S. Army.

MILS 492. Military Science and Leadership: Independent Study. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses. Enrollment is restricted to students of junior or senior standing who have acquired a minimum of 12 credits in military science and leadership. Determination of the amount of credit and permission of the department must be obtained prior to registration. The course is a mechanism to continue students' study of leadership and Army doctrine when they have exhausted all other available military science courses. Students will critically examine several historical and contemporary leaders through the lens of different theories of leadership. These theories will come from the Army's leadership model, as well as those used in the civilian sector. At the conclusion of this course, students will have mastered the Army's leadership model and be prepared to develop subordinate leaders as second lieutenants in the U.S. Army. Graded as pass/fail.

New Media and Textual Studies (NEXT)**NEXT 240. Reading Technology, Media and Culture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Builds on students' ability to analyze texts, media and associated cultural productions, emphasizing critical thinking, relationships between forms and cultural contexts. Individual sections may focus on a particular theme, unifying question or interdisciplinary approach.

NEXT 383. Digital Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A survey of current topics in the critical study of digital media.

NEXT 491. Topics in Digital Studies: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. Focused study of specific topics in the critical study of digital media.

Operations Research (OPER)**OPER 327. Mathematical Modeling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200. Fundamental concepts of mathematical modeling. Topics may include differential equation models, optimization models and probabilistic models. Practical problems will be discussed throughout.

OPER 391. Topics in Operations Research. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of 6 credits. A study of selected topics in operations research. See the Schedule of Classes for specific topics to be offered each semester and prerequisites. Because of the changing subject matter to be treated in this course, enrollment requires permission of the instructor.

OPER 427. Deterministic Operations Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 245 or CMSC 255, MATH 310 and OPER 327. Introduction to topics in optimization including linear programming, network models and integer programming. Focuses on constructing sound models and on solving them using appropriate software. Algorithms and model properties are also discussed. Students may not receive degree credit for both OPER 427 and OPER 527.

OPER 428. Stochastic Operations Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 245 or CMSC 255, MATH 310 and STAT 309. Introduction to topics in discrete-event and Monte Carlo simulation including the application of probabilistic models in real-world situations, random number generation, random variate generation and Monte Carlo integration. Students may not receive degree credit for both OPER 428 and OPER 528.

Philosophy (PHIL)**PHIL 101. Introduction to Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to some of the main branches of philosophy. Some of the issues that might be addressed are: What is knowledge? Is reason or experience the basis for all knowledge? Can we have knowledge of the past or of the future? What is truth? Does God exist? Is there a mental realm separate from the material realm? Are the laws of nature deterministic? Do we have free will? What makes an action morally permissible? What is the proper role of the state in regulating our lives? This course is directed primarily at first- and second-year students.

PHIL 103. Ancient Greek and Medieval Western Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Western philosophy from the ancient Greeks (e.g., Socrates, Plato and Aristotle) through the medieval period (e.g., Augustine and St. Thomas Aquinas).

PHIL 104. Modern Western Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Western philosophy from the Renaissance to the 19th century (e.g., Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Hegel and Marx).

PHIL 201. Introduction to Ethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112; or HONR 200 and one of ENGL 295 or HONR 250. An introduction to the main topics in moral philosophy. Includes a discussion of contemporary moral issues. Possible topics include the morality of abortion, animal rights, world hunger, pornography, capital punishment, sexual behavior, environmental ethics and reverse discrimination.

PHIL 211. History of Ethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics and their application to fundamental moral questions, as illustrated by the ethical systems of such historically important Western philosophers as Plato, Aristotle, Augustine, Hume, Mill and Kant.

PHIL 212. Ethics and Applications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in different areas. Such problems as abortion, the welfare of animals, world hunger, pornography, capital punishment, nuclear defense, sexual behavior, environmental ethics and reverse discrimination may be used as illustrations.

PHIL 213. Ethics and Health Care. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in health care. The following issues may be used as illustrations: abortion, euthanasia and the right to die, human experimentation, treating mental illness, genetic technologies, the concepts of health and disease, and the funding of health care.

PHIL 214. Ethics and Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in business. The following issues may be used as illustration: affirmative action, investment in unethical companies or countries, product safety, whistle blowing and advertising.

PHIL 221. Critical Thinking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to inductive and deductive reasoning, with emphasis on common errors and fallacies.

PHIL 222. Logic. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An evaluation of deductive arguments utilizing the methods of symbolic logic.

PHIL 230. Reason, Science and the Self. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open to Honors College students only. The reasonableness of a belief often depends on the arguments that support it. One primary goal of this course is to sharpen the abilities to identify, analyze and assess arguments. Another primary goal is to show how to apply critical reasoning skills to philosophical explorations of the nature of science, knowledge and personal identity.

PHIL 250. Thinking About Thinking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An interdisciplinary course about thinking. Covers the development of the principles of reasoning, such questions as how thinking relates to behavior and brain activity and how to think about specific areas of our lives, such as science, morality, religion, the arts and the law.

PHIL 291. Topics in Philosophy. 1-4 Hours.

Semester course; variable hours. 1-4 credits. Prerequisite: as specified in the Schedule of Classes or written permission of instructor. An introductory study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topics to be offered each semester.

PHIL 300. Philosophical Concepts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIL 101, PHIL 103 or PHIL 104; and PHIL 221 or PHIL 222; and one more PHIL course; or permission of instructor. An introduction to basic philosophical concepts and distinctions to be used throughout various areas of philosophy. These concepts and distinctions include universals/particulars, realism/anti-realism, intension/extension, modality, possible worlds, analytic/synthetic, a priori/a posteriori, linguistic/mental content and internalism/externalism.

PHIL 301. Metaphysics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIL 101, PHIL 103 or PHIL 104; and PHIL 221 or PHIL 222; and one more PHIL course; or permission of instructor. An examination of central metaphysical issues, for example, the mind-body problem, free will, causality, action, realism and the problems of universals.

PHIL 302. Epistemology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIL 101, PHIL 103 or PHIL 104; and PHIL 221 or PHIL 222; and one more PHIL course; or permission of instructor. An examination of central epistemological issues, for example, the problem of justification, empirical knowledge, perception, rationality and truth.

PHIL 303. Philosophy of Language. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy including PHIL 222 and 6 additional credits, at least 3 of which must be from PHIL 101, PHIL 103 or PHIL 104, or permission of the instructor. An examination of central issues in the philosophy of language; for example, the nature of meaning and reference, reductionism, properties of languages and the character of artificial symbols systems.

PHIL 320. Philosophy of Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 201, PHIL 211, PHIL 212, PHIL 213, or PHIL 214, or permission of instructor. A critical examination of the nature of law and criminal justice in the light of important human values. The following topics will be considered: the nature of law and legal reasoning, the legal enforcement of morality, and such controversies as punishment versus rehabilitation and the right to due process versus the need for public safety.

PHIL 322. Tibetan Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A basic introduction to the history, development and mythology of the Buddhism of Tibet focusing on the Indian heritage and shared basis of all Buddhist practices, a clear identification of the three vehicles found in Buddhism, and a careful consideration of the path of the Bodhisattva, the hero of Great Vehicle Buddhism. Crosslisted as: RELS 322.

PHIL 326. Existentialism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIL 101, PHIL 103, PHIL 104, PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221 or PHIL 222. An examination of the nature of truth, freedom, responsibility, individuality and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel. Crosslisted as: RELS 326.

PHIL 327. Normative Ethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIL 221 or PHIL 222; PHIL 201, PHIL 211, PHIL 212, PHIL 213 or PHIL 214; and 3 additional credits of philosophy; or permission of instructor. A study of issues in systematic normative ethics, including such topics as egoism, consequentialism, utilitarianism, deontology and the theory of the virtues.

PHIL 328. Metaethics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIL 221 or PHIL 222; PHIL 201, PHIL 211, PHIL 212, PHIL 213 or PHIL 214; and 3 additional credits of philosophy; or permission of instructor. A study of issues in the semantics and metaphysics of ethics. Such topics as the following will be discussed: the objectivity of ethical judgements, the semantic value of ethical judgements and the possibility of ethical knowledge.

PHIL 331. Philosophy of Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits of philosophy and 6 credits of natural sciences courses. An examination of the bases of scientific inquiry in both the natural and social sciences; including a study of such topics as hypothesis formation and testing, and the nature of scientific laws, theories and explanations.

PHIL 335. Social and Political Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 201, PHIL 211, PHIL 212, PHIL 213, or PHIL 214, or permission of instructor. A critical examination of political power and of the relationship between the individual and society. Possible topics include: anarchism and the justification of having a state at all; political views about what sort of state is justified (e.g., conservatism, liberalism, communitarianism, feminism, Marxism); private vs. collective property; market vs. planned economies; democracy vs. totalitarianism; and civil disobedience and revolution.

PHIL 340. Philosophy for Children. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: two philosophy courses, which must include at least one of PHIL 101, 103 or 104. A service-learning course requiring at least 15 hours of service in which students will be required to lead philosophical discussions with primary/secondary schoolchildren. An analysis of perennial philosophical questions and problems with the aim of introducing them to children. Some of the questions that might be addressed include: What is happiness? What is justice? What is a mind? Can a mind exist apart from a body? Can machines think? What is time? What is knowledge? What are the limits of human knowledge?.

PHIL 391. Topics in Philosophy. 1-4 Hours.

Semester course; variable hours. 1-4 credits. Prerequisite: as specified in the Schedule of Classes or permission of instructor. A study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topics to be offered each semester.

PHIL 408. Indian Tradition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: at least six credits from philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism and contemporary developments. Crosslisted as: RELS 408.

PHIL 410. The Chinese Tradition in Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: RELS 410/INTL 410.

PHIL 412. Zen Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: RELS 412/INTL 412.

PHIL 421. Aesthetics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIL 101, 103, 104, 201, 211, 212, 213, 214, 221 or 222. A critical survey of philosophies of art from antiquity to the 20th century. Topics include: the nature of art, creativity, aesthetic experience and aesthetic judgments.

PHIL 430. Philosophy of Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIL 101, PHIL 103, PHIL 104, PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221 or PHIL 222. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality and the basis of authority. Crosslisted as: RELS 430.

PHIL 440. Mysticism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology and magic. Crosslisted as: RELS 440.

PHIL 490. Seminar in Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: one of PHIL 301, 302, 303, 320, 327, 335 or permission of instructor in exceptional cases. Research and analysis of selected philosophical topic in a seminar setting. Must be taken at least once as a senior (i.e., after the completion of at least 85 credit hours toward the degree) to satisfy the capstone requirement.

PHIL 492. Independent Study. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. An independent study course to allow interested majors in philosophy to do research, under the direction of a professor qualified in that field, in an area of major interest.

PHIL 496. Senior Research Project. 1-4 Hours.

Semester course; 1-4 credits. Prerequisites: Senior status; two courses from PHIL 301, 302, 303, 320, 327, 335, 391; and written approval by faculty supervisor. An individual research project to develop a polished journal-length research paper. This course is intended primarily for students who wish to develop a dossier paper for submission to a philosophy graduate program.

Physics (PHYS)**PHYS 101. Foundations of Physics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. For non-science majors. Introduction to the fundamental ideas of physics. The course covers selected topics in mechanics, heat, optics, electricity and magnetism, and modern physics. Not applicable toward the physics major. An optional laboratory may be taken with this course; see PHYZ 101.

PHYS 103. Elementary Astronomy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A descriptive approach to astronomy dealing with basic features of our solar system, our galaxy and the universe. Not applicable toward physics major. An optional laboratory may be taken with this course; see PHYZ 103.

PHYS 107. Wonders of Technology. 4 Hours.

Semester course; 5 lecture/laboratory/recitation hours. 4 credits. Introduction to physics concepts involved in everyday technological applications. The course covers selected topics in mechanics, heat, optics, electricity and magnetism, and modern physics by depicting their role in common devices. The laboratory focuses on applications of physics principles to everyday real-life situations. Not applicable toward the physics major.

PHYS 201. General Physics I. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 151. Designed primarily for life-science majors. Basic concepts of motion, waves and heat. Not applicable toward the physics major.

PHYS 202. General Physics II. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: PHYS 201 or PHYS 207. Designed primarily for life-science majors. Basic concepts of electricity, magnetism, light and modern physics. Not applicable toward the physics major.

PHYS 207. University Physics I. 5 Hours.

Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Prerequisite: MATH 200 or permission of instructor. A vector- and calculus-based introduction to the fundamental concepts of mechanics, heat and wave motion.

PHYS 208. University Physics II. 5 Hours.

Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Prerequisite: PHYS 207. Corequisite: MATH 201. A vector- and calculus-based introduction to the fundamentals of electricity, magnetism and optics.

PHYS 211. Physical Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201 and PHYS 208. Corequisite: MATH 307. Extends the discussion of physical phenomena introduced in prerequisite courses to introduce topics and skills needed for more advanced physics courses. Topics include applying complex analysis to wave motion and oscillations, methods to solve problems in mechanics and an introduction to classical thermodynamics using multivariate analysis.

PHYS 215. Science, Technology and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examination of scientific breakthroughs that have led to transformational technologies that are continuing to impact society today. Topics include a historical perspective, an understanding of scientific principles and technologies and an examination of how such discoveries have changed society. Not applicable toward physics major.

PHYS 291. Topics in Physical Science. 1-3 Hours.

Semester course; 1-3 lecture or laboratory hours. 1-3 credits per semester. A study of a selected topic in physics, astronomy, geology, meteorology or oceanography. Not applicable toward physics major. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

PHYS 301. Classical Mechanics I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 307. Corequisite: MATH 301. Review of vector calculus. Newtonian mechanics: single particle, oscillations, motion under central forces and dynamics of a systems of particles.

PHYS 302. Classical Mechanics II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Motion in noninertial frames, dynamics of rigid bodies, coupled oscillators, continuous systems and wave equations in one dimension.

PHYS 307. The Physics of Sound and Music. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: A 100- or 200-level physics course or equivalent and the ability to read music or sing or play a musical instrument, or permission of instructor. Basics of the physics of waves and sound. Fourier synthesis, tone quality, human ear and voice, musical temperament and pitch, physics of musical instruments, electronic synthesizers, sound recording and reproduction, room and auditorium acoustics. Not applicable toward the physics major. Crosslisted as: MHIS 307.

PHYS 315. Energy and the Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to non-physics majors with junior or senior standing; not applicable to the physics major. A study of society's demands for energy, how it is currently being met, the environmental consequences thereof and some discussion of alternatives. Crosslisted as: ENVS 315.

PHYS 317. Preparing for the MCAT and Medical Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 152, CHEM 102, PHYS 202 or PHYS 208. This course introduces physics majors to areas of medical practice where physical sciences play a key role. These include but are not limited to radiology and radiation oncology, orthopedics, pulmonology, and electrophysiology. Students will also review key topics in physics and life sciences that are tested on the Medical College Admissions Test. Broadly, these include chemical and physical foundations of biological systems as well as biological and biochemical foundations of living systems.

PHYS 320. Modern Physics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 307. Corequisite: MATH 301. Foundations of modern physics including special relativity, thermal radiation and quantization, wave-particle duality of radiation and matter, Schrodinger equation, atomic, nuclear and particle physics, and molecular structure and spectra. A continuation of PHYS 208.

PHYS 325. Visualization of Physics Using Mathematica. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 307. Corequisite: PHYS 301 or PHYS 320. Visualization of various areas of physics using the Mathematica language for performing numerical calculations and producing graphics and animations. Examples will be taken from classical mechanics, classical electromagnetism, modern physics, statistical mechanics and condensed matter physics.

PHYS 335. Experimental Skills for Physicists. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: PHYS 320 and PHYZ 320. Practical skills in experimental physics, including use of micro controllers, sensor modules, high-precision positions and opto-electronics. Skills will be used to address engaging and current real-world challenges.

PHYS 340. Statistical Mechanics and Thermodynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Microscopic theory of temperature, heat and entropy, kinetic theory, multicomponent systems, and quantum statistics. Mathematical relationships of thermodynamics.

PHYS 351. Guided Inquiry for University Physics I. 1.5 Hour.

Semester course; 1 lecture and 1 recitation hour. 1.5 credits. Prerequisites: PHYS 207 and permission of instructor. Student learning assistants aid in recitation sections of PHYS 207 University Physics I using guided inquiry and group-based activities. Further develops the core skills of PHYS 207. Introduces students to the principles of active and collaborative learning in physics through practical, hands-on problem-solving, class discussions and demonstrations.

PHYS 352. Guided Inquiry for University Physics II. 1.5 Hour.

Semester course; 1 lecture and 1 recitation hour. 1.5 credits. Prerequisites: PHYS 208 and permission of instructor. Student learning assistants aid in recitation sections of PHYS 208 University Physics II using guided inquiry and group-based activities. Further develops the core skills of PHYS 208. Introduces students to the principles of active and collaborative learning in physics through practical, hands-on problem-solving, class discussions and demonstrations.

PHYS 376. Electromagnetism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Electrostatics, magnetism and electromagnetic properties of matter, Maxwell's equations, electromagnetic waves, boundary conditions, and polarization.

PHYS 377. Electromagnetism II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 376. Advanced topics in electromagnetism, such as the microscopic theory of magnetism, slowly varying currents, physics of plasmas, electromagnetic properties of superconductors, Maxwell's equations and propagation of electromagnetic waves in bounded media, dispersive media, electromagnetic radiation, electrodynamics of moving charges, and the relativistic formulation of electrodynamics.

PHYS 380. Quantum Physics I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301, PHYS 320 and MATH 301, or permission of instructor. Brief introduction to the correspondence between classical and quantum mechanics, Schrodinger wave equation, operator methods in quantum mechanics, angular momentum and conservation laws, solution to harmonic oscillator and the hydrogen atom, magnetic dipole momentum and spin.

PHYS 391. Topics in Physics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits per semester. Maximum total of 6 credits. In-depth study of a selected topic in physics or physics-related technology, usually at a level requiring only elementary algebra. Not applicable toward physics major. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

PHYS 397. Directed Study. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. Maximum of 3 credits applicable toward physics major requirement; maximum total of 4 credits. Open to nonmajors. Determination of amount of credit and permission of instructor must be obtained before registration of course. Intended to allow nonmajors and majors to examine in detail an area of physics or physics-related technology not otherwise available in upper-level courses. May involve either directed readings or directed laboratory work.

PHYS 417. Topics in Biophysics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208, CHEM 102 and BIOL 152. An introduction to biophysics examining many topics in life sciences. The course will introduce how to understand phenomena in life sciences from a quantitative perspective and use physical models for complex systems. Topics include Brownian motion, mechanical and chemical equilibrium, electrostatics, molecular machines, pattern formation and physical tools in biology.

PHYS 420. Quantum Physics II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 380 or permission of instructor. Transition rates, addition of angular momentum, multi-electron atoms-ground state, X-ray and optical excitations, time independent perturbation theory, relativistic hydrogen atom and the structure of atoms, collision theory, nuclear structure, elementary particles and their symmetries.

PHYS 422. Optics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 376 or permission of instructor. Comprehensive study of propagation of light, including geometrical optics, polarization, interference, diffraction, Fourier optics and quantum optics.

PHYS 440. Introduction to Condensed Matter Physics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 340 and 380. Corequisite: PHYS 376. Structure and bonding in solids, phonons, free electron Fermi gas, energy bands, semiconductors, Fermi surface, optical properties and magnetism.

PHYS 450. Senior Physics Laboratory. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: PHYS 301 and 320, and PHYZ 320. Experiments in condensed matter physics with an introduction to the instrumentation and data analysis used in the research laboratory.

PHYS 480. Particle Physics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 340, PHYS 376 and PHYS 420. Basic concepts of particle physics, including the Dirac equation, lowest-order quantum electrodynamics calculations, scattering amplitudes and cross sections, the weak interaction, processes involving quarks and their symmetries, and quantum chromodynamics.

PHYS 483. Introduction to Astrophysics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 320 and PHYS 340. Pre- or corequisites: PHYS 376 and PHYS 380. Basic concepts of star formation and evolution, galactic structures, and cosmology. Includes stellar atmospheres and interiors, the sun, the Milky Way and other galaxies, and black holes.

PHYS 490. Seminar in Conceptual Physics. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: PHYS 340, PHYS 376, PHYS 380 and PHYZ 320. Restricted to seniors in physics with at least 85 credit hours taken toward the degree. A senior capstone course in physics designed to help students formulate physics-related questions in such a way that they can obtain quantitative answers. Students will describe their results in a senior paper and in an oral presentation.

PHYS 491. Topics in Physics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum of 3 credits applicable toward physics major requirement; maximum total of 6 credits. An in-depth study of a selected topic in physics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

PHYS 492. Independent Study. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. Maximum of 3 credits applicable toward physics major requirement; maximum total of 8 credits. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. Independent projects in experimental or theoretical physics.

Physics Lab (PHYZ)**PHYZ 101. Foundations of Physics Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: PHYS 101. An optional laboratory consisting of experiments and activities correlated with PHYS 101.

PHYZ 103. Elementary Astronomy Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: PHYS 103. An optional laboratory course consisting of experiments and activities related to PHYS 103.

PHYZ 320. Modern Physics Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisite: PHYS 320. Experimental work correlated with PHYS 320.

Political Science (POLI)**POLI 103. U.S. Government. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of American national government focusing on its underlying political ideas, constitutional basis, major institutions and their interaction in the determination of public policy.

POLI 105. International Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior and other selected issues as appropriate. Crosslisted as: INTL 105.

POLI 107. Political Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the great thinkers and ideas of political theory. Provides an analysis of the relationship between ethics and politics in contemporary democracy and current challenges to traditional democratic theory. Topics discussed may include the nature of human existence and civilization; political obligations between the state and the citizen and among citizens; attempts to justify authority; the content and uses of power; and the right to disobedience and resistance, freedom, social justice, and equality.

POLI 109. Comparative Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the ways in which societies around the world govern themselves. Covers such topics as the historical evolution of the political system, political processes and institutions, and key issues in contemporary public policy for a globally representative group of 10 to 15 countries.

POLI 301. U.S. Parties and Elections. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of U.S. political parties and elections. Topics will include the history, organization and methods of U.S. political parties, presidential nominations and elections; Congressional elections.

POLI 302. Politics of the Civil Rights Movement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. It has special focus on the events of the 1960s and particularly their implication for the current state of U.S. Civil Rights. Crosslisted as: AFAM 302.

POLI 303. Public Opinion and Polling. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The study of the formation, expression and influence of individual and organized public opinion on political institutions in the U.S. Topics include how the public forms and expresses attitudes, how public opinion influences political outcomes and how public opinion is measured and analyzed.

POLI 304. Political Campaigns and Communication: New Hampshire Primary. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment requires permission of instructor. Introduces students to the historical and political contexts of presidential primary campaigning. Investigates candidate strategy and ways candidates seek out money, media coverage and grassroots organization. Includes a week-long trip to New Hampshire during the first-in-the-nation primary to provide students with hands-on experience. Offered as an intersession class during presidential election years.

POLI 305. Political Campaigns and Communication: Theory and Process. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of political campaigns focusing on presidential elections. Analysis includes the study of electoral contexts, political mobilization, campaign organizational structures and strategies, campaign rhetoric, and the evolution of campaign-related technology such as polling and social media.

POLI 306. The Congress. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the behavior of legislators and the structures and processes of legislative decision making in the U.S. Congress. Analysis will include both the internal and external environment of congressional policy making, and an assessment of the impact of congressional policy.

POLI 307. Political Behavior. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the major theoretical approaches and empirical research in the field of mass political behavior, with a particular emphasis on how individuals develop their ideologies and party identifications, as well as how those and other factors shape political decisions.

POLI 308. U.S. Presidency. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A political and institutional study of the chief executive, focusing especially on the presidential personality and relations with Congress, the bureaucracy, the courts and the shaping of domestic and foreign policy.

POLI 309. Bureaucratic Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the nature of bureaucracy and bureaucratic phenomena in American governments; the role and involvement of the bureaucracy in politics and the policy-making process. Primary focus on theories and approaches to understanding the central role of bureaucracy in modern society and its use and abuse of power.

POLI 310. Public Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analytical survey of policy formulation and implementation in the United States, together with an examination of the impact of policy upon individuals and groups in American society.

POLI 311. Politics of the Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crises it centers on. Special attention will be given to the constitutional, political and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes. Crosslisted as: ENV 311.

POLI 312. Media and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides a general overview of how media influence political attitudes and political behavior. Students will analyze the role of new media, soft media and infotainment and how it mediates political messages to the general public. Students will also explore the effects of various types of communications on Americans' attitudes and behaviors, including the rise of "fake news," partisan media, mis- and disinformation, and fact-checking.

POLI 313. U.S. Constitutional Law: Civil Rights and Civil Liberties. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the major provisions of the U.S. Constitution concerning civil rights and civil liberties as interpreted by the U.S. Supreme Court. Topics to be covered include how the federal courts enforce individual rights found in the Constitution, limitations on governmental actions and the use of the Constitution as a starting point for discussions of the nation's need to balance competing interests of individuals, government and societal values.

POLI 314. U.S. Constitutional Law. 3 Hours.

: Structure of Government Semester course; 3 lecture hours. 3 credits. A survey of the development of the Constitution as it pertains to the structure of U.S. government. Topics to be covered include an introduction to the operation of the Supreme Court, separation of powers, decisions on federalism, the powers of Congress, the president, the judiciary and judicial review.

POLI 315. Courts and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of theories and models of judicial decision-making in the Supreme Court, focusing on judicial structure and procedures, policy-making analysis, political ideology, and judicial activism.

POLI 316. Women and the Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights of women of color and lesbians, reproductive rights, women criminals and women in the legal profession. Crosslisted as: GSWS 316.

POLI 318. Politics of Race, Class and Gender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: AFAM 318/GSWS 318.

POLI 319. Women and American Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course analyzes the participation of women in American politics. Attention is given to both women's historical and contemporary roles in politics, their participation as voters and citizens, and their behavior as candidates and office holders. Additional topics may include workplace, family and education issues and reproductive rights. Crosslisted as: GSWS 319.

POLI 320. Research Methods in Political Science. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Current methods of research in the discipline of political science. Includes a brief introduction to the tools and techniques for exploring and analyzing political science data.

POLI 321. Urban Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of urban political power and influence, governance, and public policy. Topics include: power and influence, governmental structures and the political process, public policy, and service delivery.

POLI 322. State and Local Government and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the politics and governance of states and localities. Attention is devoted to political culture, interest groups, political parties, the legislative, executive and judicial components of state government, along with the structure and political processes of local governments.

POLI 323. Virginia Government and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of Virginia state government and politics, with appropriate attention given to political culture, interest groups, political parties, the media and the legislative, executive and judicial branches of government.

POLI 329. Intergovernmental Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of vertical and horizontal intergovernmental relations. Attention will be given to the major variants of federalism. The role of categorical and block grants in programmatic federalism will be assessed. Trends in intergovernmental relations will be advanced.

POLI 330. Lobbying. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides students with a practical overview of lobbying in the U.S. system, including its historical context; how different types of groups use lobbying as a tactic to influence government; and regulations and ethical considerations. Students will have a working knowledge of the American lobbying industry; the types of groups that employ lobbying as a political strategy to attain their organizational goals; and how money is used within the American system.

POLI 331. Public Administration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the concepts and practices of public administration in the United States. Particular attention will be given to the administrative procedures and practices of the national government and of the government in Virginia.

POLI 332. Administrative Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Survey of the major functions of the modern administrative state as interpreted by the U.S. Supreme Court. Topics to be covered include the constitutional and legal authority of bureaucratic agencies, rulemaking and adjudication, and judicial review of agency action. Emphasizes the tensions found in the administrative process, how administrators try to address them while performing their jobs and how the environment surrounding administrative behavior affects administrators trying to do their work.

POLI 339. Politics in Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Addresses how political ideas and concepts are created and propagated in film. Views the film industry as a critically important agent of political socialization.

POLI 341. History of Political Theory: Classical to Modern. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of leading political ideas of the ancient and medieval periods.

POLI 342. History of Political Theory: Modern to Contemporary. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of leading political ideas of modern and contemporary thought.

POLI 343. Black Political Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present. Crosslisted as: AFAM 343.

POLI 344. Contemporary Political Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides a survey of recent trends in political theory. It examines updates of the major ideological traditions, arguments about the nature of modernity and recent developments in environment, feminist and non-Western thought.

POLI 345. African-American Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. In this course, students will discuss and analyze the dynamics of the black experience in the American political system. The status of African-Americans in the United States and the struggle for racial equality will be examined, as will the manner in which American institutions have responded to these phenomena. Students will examine the race/class metric in African-American politics, particularly policies of Affirmative Action as a black progress strategy. Crosslisted as: AFAM 345.

POLI 346. Black Political Activism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the long history of Black political activism in the United States, focusing on racial justice and anti-racist movements. Utilizes historical, social scientific and legal frameworks.

POLI 347. Black Queer Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credit hours. Examines the history, key issues and contemporary scholarship of Black queer politics. Focuses on themes of justice, equity, gender, sexuality and race.

POLI 351. Governments and Politics of the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects of traditionalism, the political nature of transition, the instruments of political modernization, and evolution and revolution in the political process of Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the principal forces that shape the policies and political dynamics of the region. Crosslisted as: INTL 351.

POLI 352. European Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries. Crosslisted as: INTL 352.

POLI 353. Latin American Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges. Crosslisted as: INTL 353.

POLI 354. Russian and Post-Soviet Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes and disintegration of the Soviet political system and the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems and foreign policy. Crosslisted as: INTL 354.

POLI 355. Asian Governments and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China and India. Crosslisted as: INTL 355.

POLI 356. Government and Politics of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism, and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: AFAM 356/INTL 356.

POLI 357. Politics of Southern Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: AFAM 357/INTL 357.

POLI 358. Concepts of Comparative Government. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development. Crosslisted as: INTL 358.

POLI 359. The Politics of Developing Areas. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution and civil war. Crosslisted as: INTL 452.

POLI 360. China in Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Traces how China is making the transition from a planned to market economy, and what implications this transition has on the political, social and urban landscape. Class discussions are grounded on a basic understanding of China's modern history and regional geography. Crosslisted as: INTL 480.

POLI 361. Issues in World Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collective security, international economic competitiveness, global environmental politics as well as selected others. Topics will vary with current events and trends in the international arena. Crosslisted as: INTL 361.

POLI 362. International Organizations and Institutions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community and the Organization of American States. Crosslisted as: INTL 362.

POLI 363. U.S. Foreign Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analytical survey of processes and practices in the formulation of U.S. foreign policy, including an introduction to the goals, problems of implementation and current challenges faced by policy makers. Crosslisted as: INTL 363.

POLI 364. Vietnam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of U.S. involvement. The course will examine closely how and why the U.S. became involved in Vietnam and what impact the Vietnam War has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course also will consider additional topics including public opinion and the war, the relationship between the president and Congress in light of the war, and contemporary U.S. politics as a backlash against the political movements of the 1960s. Crosslisted as: INTL 364.

POLI 365. International Political Economy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances and others. Crosslisted as: INTL 365.

POLI 366. Women and Global Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: GSWS 366/INTL 368.

POLI 367. Terrorism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the modern problem of terrorism with an emphasis on the political nature of terrorist acts. Examines the history of terrorism, domestically within the U.S. and internationally, the role of religion, the structures and operations of terrorist organizations, as well as counterterrorism policies and policy-making. Crosslisted as: HSEP 301.

POLI 368. Comparative National Security Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of national security policies and policy-making in a diverse set of nation-states. Emphasis is placed on comparing how threat perception, historical context, ideology, political structure and leadership impact national security policies of both powerful and weak nation-states. Crosslisted as: INTL 468.

POLI 369. U.S. National Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of key issues in U.S. national security including national security decision-making, the use of force, military intervention, nuclear strategy and strategic arms control, ballistic missile defense, the transformation of war due to technology and globalization, defense policy, planning and budgeting, the impact of technology on strategy from airpower to cyberspace and robotics, and critical regional issues.

POLI 370. Foundations of Nonprofit Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the history and foundations of the nonprofit agency in the U.S. and abroad. Compares and contrasts relationships between business, government and the nonprofit sector. Discusses requirements for formalizing and managing nonprofit organizations from the perspectives of the volunteer board and employees. Examines issues of accountability, policy, research and resource development.

POLI 372. Ethics, Law and Governance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how legal, legislative and public policy issues affect the development and growth of nonprofit organizations. Examines ethical principals and legal issues related to personnel and employment, as well as the goals of advocacy and its importance to nonprofit practitioners.

POLI 374. Financial Management for Nonprofits. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines how nonprofit organizations are influenced by prices, distribution of goods and services and the distribution of income and wealth. Topics include financial-statement analysis, time-value of money, budgeting concepts and techniques, securities valuation, long- and short-term financial planning issues and working capital management. Designed to develop skills in decision-making in financial management of the nonprofit organization.

POLI 380. Human Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the key elements of human security: the positive and negative impacts of globalization, the rise and impact of civil violence within many nations, the dilemmas of the aid industry, the impact of non-state actors, and issues related to chronic poverty, food security and water security.

POLI 381. The Politics of Genocide and Human Rights. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the history and causes of genocide and large-scale human rights violations of the 20th century and more recent examples. Using case studies, and focusing on the Holocaust as the paradigmatic genocide, the course studies historical events and theoretical explanations to understand why people have been so willing, in every historical era, to kill each other in large numbers.

POLI 382. International Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the basic principles of international and comparative health, as well as the national and international institutional structures in place to address health challenges. Focuses on the political, economic, social and individual burdens of inadequate health to societies and the international community. The implementation of global health programs and methods used to evaluate them are studied in detail.

POLI 383. The Middle East and North Africa in Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the political, social and economic aspects of the "new" Middle East and North Africa after what has come to be known as "The Arab Spring." Topics addressed include a historical and geographical overview of the Arab world prior to the mass uprisings, an examination of the political and economic motivations for popular unrest in several Arab countries, the role of women and youth movements as well as social media in mass demonstrations that happened in several Arab countries, the wider regional and global impact of the uprisings, and an assessment of the Arab world today.

POLI 384. International Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Covers the rules and practices of international law as a vehicle for exploring the relations among states, international organizations and individuals within the international system.

POLI 385. International Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the theoretical and policy structures underlying international relations -- specifically international security relationships -- between and among nation-states.

POLI 386. Environmental Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on how the availability of natural resources affect human civilization and how political power artificially determines their accessibility.

POLI 387. Politics of the European Union. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Exposes students to the history, institutions and policies of the European Union alongside key issues facing the EU and its member states.

POLI 388. International Relations Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the international theoretical and policy structures underlying international relations and specifically how to make general explanations across world politics. It will provide a conceptual understanding of international relations theories, international politics, the role of logic and evidence in crafting explanations and, ultimately, how to square conflicting explanations of international systems.

POLI 391. Topics in Political Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum total of 9 credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

POLI 448. Scope and Method of Political Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: POLI 103 or permission of instructor. A comprehensive and systematic study of the philosophy of political science, various theories seeking to explain political phenomena and some of the techniques of political analysis.

POLI 490. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: 24 credits in political science courses or permission of instructor. A capstone course examining the major ideas and debates in each of the four sub-fields of the discipline of political science: American government, political theory, comparative politics and international relations. Students are required to produce a research project on a critical issue in one of the sub-fields.

POLI 491. Topics in Political Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum total of 9 credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

POLI 492. Independent Study. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in political science. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration of the course. An independent study course that allows a political science major or other student who meets the requirement to do research, under the direction of an instructor qualified in that area, in a subject or field of major interest.

POLI 493. Political Science Internship. 1-6 Hours.

Semester course; variable hours. 1-6 credits. (50 hours per credit.) May be repeated for a maximum of 6 credits. Permission of internship coordinator required. Restricted to political science majors, nonprofit management and administration minors and public management minors. Provides an opportunity to relate theory to practice through observation and actual experience within the field of political science. Graded as pass/fail.

POLI 494. Political Science Mentorship. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Prerequisites: 24 credits in political science courses including POLI 103, 105, 107 and 109, permission of instructor, and 3.3 GPA in POLI courses. May be repeated for a maximum of 6 credits. A mentorship course that allows students to develop advanced research skills, to experience managing a classroom and to present the results of their research in a classroom setting. Different sections of the course specialize in different subfields of political science: U.S. government, comparative politics, international relations and political theory.

Portuguese (PORT)**PORT 101. Beginning Portuguese I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Portuguese to take the placement test to determine eligibility. For students with no prior knowledge of Portuguese. Beginning grammar, reading, writing, reading and oral skills.

PORT 102. Beginning Portuguese II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PORT 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

PORT 201. Intermediate Portuguese I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PORT 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Portuguese. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

PORT 202. Intermediate Portuguese II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PORT 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Portuguese. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

PORT 391. Topics in Portuguese. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 12 credits. Prerequisite: PORT 202. An in-depth study of selected topics in Portuguese. See the Schedule of Classes for specific topic to be offered each semester.

Psychology (PSYC)**PSYC 101. Introduction to Psychology. 4 Hours.**

Semester course; 3 lecture and 1 computer-assisted laboratory hours. 4 credits. A survey of the basic principles, methods of investigation and fields of study and application. Includes individualized application of principles and methods in computerized learning activities. This course is a prerequisite for upper-level work in the field of psychology.

PSYC 201. Career Development in Psychology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PSYC 101. Introduction to the discipline of psychology and the career alternatives available in various specialties. Self-assessment, career decision-making skills, educational program planning methods will be covered. Special topics will include graduate/professional school options, opportunities for minority students and job search strategies for the B.A. or B.S. psychology major.

PSYC 214. Applications of Statistics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: PSYC 101 and STAT 210 both with a minimum grade of C. Frequency distributions, measures of central tendency and variability; sampling, probability, correlation and significance tests as applied in psychological data.

PSYC 301. Child Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study is made of the growth and development of the child until puberty. Childlike is viewed in terms of physical, mental, social, emotional and educational factors. PSYC 304 Life Span Developmental Psychology also may not be taken for credit.

PSYC 302. Psychology of Adolescence. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101. A study of mental, moral, social and physical development from puberty to maturity viewed as in child psychology. Designed for secondary school teachers, youth leaders and professional psychologists.

PSYC 303. Personal Adjustment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Surveys major theories of personality as a basis for studying theory, research and intervention into areas that require personal adjustment. Such areas include sense of self, stress and coping, work and career and several varieties of interpersonal relationships. Positive adjustment and growth as well as problems are discussed.

PSYC 304. Life Span Developmental Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Reviews the basic concepts and principles of physical, cognitive and social development at each major stage of life-prenatal, infancy, toddlerhood, preschool, middle childhood, adolescence, adulthood and old age. Consideration is given to the study of development at each stage of life and to different theoretical explanations for development. PSYC 301 Child Psychology may not also be taken for credit.

PSYC 305. Educational Psychology. 3 Hours.

Semester course; 3 lecture hours (delivered online, face-to-face or hybrid). 3 credits. Prerequisite: PSYC 101. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development. Crosslisted as: EDUS 305.

PSYC 306. Psychology of Adult Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The life stages and transitions of the young adult, middle age and young-old phases of the life cycle are considered, following a review of methods of research within life-span development psychology. Topics include the impact of events such as birth of the first child, job relocation, mid-life re-evaluation and anticipated retirement.

PSYC 307. Community Solutions: Multiple Perspectives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Explores possibilities for addressing social concerns of the Richmond community by understanding the complex nature of social issues as essential to their successful amelioration via perspectives of life and social sciences. Toward this end, expertise from the social sciences, the life sciences and the community are integrated. Includes a service-learning experience (a 20-hour volunteer requirement). Crosslisted as: LFSC 307.

PSYC 308. Stress and its Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Physiological and psychological aspects of stressors and the stress response. Review of principles, research and methods of stress management, such as relaxation, self-suggestions, meditation and biofeedback.

PSYC 309. Personality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The study of the various approaches to understanding human behavior in terms of personality theory. Various theories will be examined for commonality and uniqueness in assumptions, dynamics and development of personality.

PSYC 310. Industrial Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Application of psychological principles and techniques to problems in personnel management and human engineering; recruitment, selection, training and placement in industry; criteria in testing and test development; morale evaluation and improvement, employee counseling; work-management communications; human engineering in equipment design, quality control, working conditions and safety.

PSYC 317. Experimental Methods. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSYC 214 with a minimum grade of C. Introduction to experimental procedures and laboratory techniques in psychology. Demonstrations and experiments in sensation, perception, learning, emotion and motivation.

PSYC 318. Principles of Psychological Tests and Measurements. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: minimum grade of C in PSYC 101 and minimum grade of C in STAT 210. Concepts in psychological measurement and a survey of commonly used tests; testing procedures and rationale underlying these tests; tests of intelligence, aptitude, achievement, interest and personality critically examined, procedures described for selecting and evaluating specific group tests in these areas.

PSYC 321. Social Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Survey theory and research in social psychology. Topics include interpersonal and social influence processes, attitudes and social cognition, the impact of personality on social behavior, conformity, leadership and small group behavior.

PSYC 322. Personality and Behavior of the African American. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors such as motivation, ego-functioning and the socialization processes, with special emphasis on living conditions of African-Americans. Crosslisted as: AFAM 322.

PSYC 323. Interpersonal Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Analyzes human relations from various theoretical perspectives. Typical topics include the effects of attraction, friendship, love and dependency on relationships; the evolution of relationships from initiation through termination. Strategies for increasing effectiveness of communication between individuals also are addressed.

PSYC 333. Psychology and Religious Experience. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health and human values. Crosslisted as: RELS 333.

PSYC 335. Psychology of Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse. Crosslisted as: GSWS 335.

PSYC 340. Introduction to the Helping Relationship. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview to the dynamics of communication in a helping relationship. Didactic material includes the principles of empathy, nonverbal behavior, problem-solving, crisis intervention and interview techniques. Basic paraprofessional counselor skills will be demonstrated and practiced through structured exercises.

PSYC 341. Group Dynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself. Crosslisted as: SOCY 341.

PSYC 401. Physiological Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Data from the fields of anatomy and physiology are presented, and their implications for psychology are discussed. The central nervous system, internal environment, vision, audition, reflexes, emotion, learning behavior disorders and their physiological components. Behavior of the human organisms is studied from the biopsychological point of view.

PSYC 404. Social Psychology of Emotions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101, SOCY 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions.

PSYC 406. Perception. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Perception of information from sensory systems with concentration on vision and hearing. Research and theories on how we learn and judge color, form, movement, depth and how individuals integrate these in object identification.

PSYC 407. Psychology of the Abnormal. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Development of personality is discussed, with emphasis on factors leading to maladjustment. Lectures and reading cover the symptom groups of emotional disorders of both psychological and organic origin. Methods of assessing and treating these disorders are surveyed.

PSYC 410. Principles of Learning and Cognition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Comprehensive treatment of learning and cognition with emphasis on humans, from behavioral, cognitive, biological and developmental viewpoints. Topics include conditioning, information processing, memory, sociobiology and cognitive and moral development.

PSYC 412. Health Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Application of the principles and techniques of psychology to the field of medicine, to health maintenance and to illness. The integration of theoretical, research and applied issues is emphasized in the analysis of such topics as psychological/behavioral factors contributing to and protecting against physical illness (stress, smoking, exercise), factors relating to treatment and recovery (coping, treatment compliance), psychological problems resulting from illness and injury, and specific techniques and problem areas in health psychology (such as biofeedback, pain management, pediatric psychology, geropsychology, rehabilitation psychology and lifestyle change.).

PSYC 414. Psychology of Women's Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions. Crosslisted as: GSWS 414.

PSYC 415. Psychological Theories of Addiction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101; and PSYC 407 or PSYC 410. Enrollment is restricted to psychology majors (standard curriculum/all concentrations) and minors in psychology. An overview of current and historical theories related to the causes of and risk factors for problematic drug use and other addictive behaviors. Describes specific effects of different drugs of abuse and explores various behaviors (gambling, gaming, internet use) that have been identified as addictive in nature. Provides an understanding of the harms and costs associated with drug use and abuse, major approaches to understanding drug addiction (e.g., epidemiological, biological, genetic, behavioral, cognitive, transtheoretical/motivational, sociocultural, developmental), and the human experience of addiction. Introduces research methods used to generate knowledge about the causes of drug use and abuse.

PSYC 416. Psychological Treatment of Addiction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 415. Enrollment restricted to psychology majors (standard curriculum/all concentrations). A review of evidence-based practices in the assessment, diagnosis and treatment of substance use, abuse and dependence, and comorbid conditions. Discusses psychosocial and psychological approaches as well as medication-assisted therapies for substance use disorders. Examines societal views of addiction and their influences on treatment capacity and services, as well as treatment needs and services for special populations (e.g., pregnant women, adolescents).

PSYC 426. Child Psychopathology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101. Principal childhood behavioral abnormalities. A review of causes, assessment and diagnostic methods, and treatment, intervention and prevention approaches.

PSYC 451. History of Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101 and senior standing. Traces the history of ideas about mind and behavior as they relate to the theory and practice of psychology.

PSYC 491. Topics in Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum total of 6 credits in topics courses. Prerequisite: PSYC 101. An in-depth study of selected topics and issues in psychology. See the Schedule of Classes for specific topics to be offered.

PSYC 492. Independent Study. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits per semester. Maximum of 6 credits for all independent study courses. PSYC 492, PSYC 493 or PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses. Prerequisite: PSYC 101. Open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. Independent study is defined as student-conceived and initiated readings or research project which is supervised by a psychology faculty member. An oral examination or written, comprehensive paper is required at the end of the semester.

PSYC 493. Fieldwork: Human Services. 3 Hours.

Semester course; 3 credits. PSYC 492, PSYC 493 and PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses is allowed. Prerequisite: permission of instructor. Students are placed in an agency, which will provide supervised work experience in various aspects of helping other people. The setting might be a government or private community agency, or a corporation, depending on the student's goals. The student works eight hours per week at the placement site, attends several group discussion sessions during the semester and completes written assignments. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

PSYC 494. Research Internship in Psychology. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated for a maximum of 6 credits with adviser's approval. PSYC 492, PSYC 493 or PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses. Prerequisites: PSYC 101 and permission of faculty research supervisor must be obtained prior to registration. PSYC 214 and PSYC 317, or permission of supervisor. Students will work on various phases of a research project (design, data collection, data analysis, manuscript writing) under a psychology faculty member's close supervision. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

PSYC 497. Honors in Psychology I. 3 Hours.

Semester course; variable hours. 3 credits. Prerequisites: PSYC 317 (co-requisite with permission) and admission to the honors in psychology program. First in a three course sequence to develop, execute and defend an empirically based thesis in psychology. Students will work with a mentor to develop ideas into a tangible research project, working toward a proposal.

PSYC 498. Honors in Psychology II. 3 Hours.

Semester course; variable hours. 3 credits. Prerequisite: PSYC 497 with a grade of A. Students will refine research ideas developed in PSYC 497 into a formal proposal document with introduction, method and proposed results. Students are expected to propose the thesis to their committee members no later than the second week of this course and begin data collection thereafter.

PSYC 499. Honors in Psychology III. 3 Hours.

Semester course; variable hours. 3 credits. Prerequisite: PSYC 498 with a grade of A. Students will complete the research project developed in PSYC 497 and 498 and generate the final thesis, including introduction, method, results and discussion. Students must orally defend the thesis to their committee members by the end of this course with time for revisions to be submitted within the semester's defined grading period.

Religious Studies (RELS)**RELS 101. Introduction to Religious Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course examines the phenomenon of religion and religious experience. Through a phenomenological approach definitions and descriptions of the major features of the religious experience and of religious establishments, including concepts of the sacred, the numinous, religious language, texts, symbols, rituals and myths are reviewed. In addition, the social, political and spiritual dimensions of religion in human culture will be investigated.

RELS 108. Human Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the manifestations of one or more of the themes of religious studies in a diverse group of religious communities. The themes may include such wide-ranging topics as the sacred and profane, the epistemology of faith and knowledge, creation stories, human identity, the nature of the divine, the possibility of liberation or salvation, mythology, ritual, ethics, religion and art, religion and law, and religion and politics.

RELS 201. Biblical Hebrew. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Vocabulary, elementary grammar, introduction to lexica and reading of biblical texts.

RELS 202. Biblical Hebrew. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 201. Vocabulary, elementary grammar, introduction to lexica and reading of biblical texts.

RELS 250. Death: Myth and Reality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of intellectual and emotional responses to death and dying with emphasis upon their role in the development of religious thought and practice. Special attention will be paid to the death theme in literature, funeral practices and beliefs concerning the afterlife in selected world religions.

RELS 280. Introduction to Catholic Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an introduction to Catholicism's major doctrines, figures, historical events, philosophy and ethics from its beginnings in the first centuries of the Common Era through contemporary debates over such issues as abortion, sexuality and war. Students will learn about scripture, doctrine, theology, the sacraments, art and architectures, saints, social justice and gender, and the history and role of the Church.

RELS 282. Introduction to Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces Buddhism from its origins in India and addresses its major schools of thought, practice, ritual and philosophy, in Asia and beyond, particularly the United States.

RELS 291. Topics in Religious Studies. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of six credits. Focused study of selected ideas, institutions, movements, time periods and/or thinkers. See Schedule of Classes for specific topic to be offered each semester.

RELS 301. Introduction to the Hebrew Bible. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the Hebrew Bible from its beginning through the post-Exile period. Emphasis given to the literary and historical development of the text.

RELS 302. Introduction to the New Testament. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the New Testament with particular emphasis given to the historical development of the Canon.

RELS 303. Intertestamental Literature and Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The period between the Old and New Testaments as seen through the literature of the era, with emphasis on the writings of the Apocrypha, Pseudepigrapha and Josephus.

RELS 305. Hebrew Prophets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the literature and history of Israel as seen through the work of the writing prophets. Emphasis will be placed on the second part of the Hebrew Canon and the Book of Daniel.

RELS 306. Introduction to Judaism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices and beliefs. Crosslisted as: INTL 306.

RELS 307. Black Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: AFAM 307/INTL 307.

RELS 308. High and Later Middle Ages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A detailed historical overview of developments in Western Europe from the end of the first millennium through the end of the 15th century. Crosslisted as: HIST 311.

RELS 310. Mediterranean Religions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the earliest evidence of religious practice and belief in the Mediterranean region and probes the ways that the ancient traditions shaped the religions that still endure today. Also investigates the effect of religion in the Mediterranean region on related issues of intercultural relations, peace and conflict, and migration.

RELS 311. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Hinduism, Buddhism, Confucianism, Taoism and Shinto. Crosslisted as: INTL 311.

RELS 312. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Zoroastrianism, Judaism, Christianity and Islam. Crosslisted as: INTL 312.

RELS 313. Life and Literature of Paul. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the life and literature of Paul as given in Acts and the Epistles, involving special consideration of Paul's contribution to the expansion of Christianity.

RELS 314. Jesus in the New Testament. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Christ of faith and the Jesus of history as presented in New Testament literature and as interpreted in the works of selected scholars from the church fathers to the present.

RELS 315. The Ancient Near East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the ancient Near Eastern civilizations from the preliterate period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Crosslisted as: HIST 301.

RELS 317. Islam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the seventh century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, and mysticism (sufism) and law (shari'ah) and an overview of ritual practices, fundamental beliefs, theological principles and current issues in Islam and international relationship. Crosslisted as: INTL 317.

RELS 318. History of the Jewish People I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the biblical period to the early modern period, including the Israelite conquest of Canaan, Judea in Hellenistic and Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and Jewish settlement in the Ottoman Empire. Crosslisted as: HIST 333.

RELS 319. History of the Jewish People II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the early modern to the present, including the impact of the Emancipation, the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and world Jewry. Crosslisted as: HIST 334.

RELS 320. Taoism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of one of the most fundamental and influential philosophies of life in Chinese culture, focusing on the theory and practice of the basic principles of Taoism as formulated by the legendary Lao Tzu and further developed by Chuang Tzu.

RELS 322. Tibetan Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A basic introduction to the history, development and mythology of the Buddhism of Tibet focusing on the Indian heritage and shared basis of all Buddhist practices, a clear identification of the three vehicles found in Buddhism, and a careful consideration of the path of the Bodhisattva, the hero of Great Vehicle Buddhism. Crosslisted as: PHIL 322.

RELS 326. Existentialism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIL 101, PHIL 103, PHIL 104, PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221 or PHIL 222. An examination of the nature of truth, freedom, responsibility, individuality and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel. Crosslisted as: PHIL 326.

RELS 327. History of Christianity I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the early modern period, or the age of the Reformations. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings. Crosslisted as: HIST 335.

RELS 333. Psychology and Religious Experience. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health and human values. Crosslisted as: PSYC 333.

RELS 334. Religion in Contemporary America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course studies the history, literature, belief patterns and unique traits of religion in the United States. The evolution of religion and religious sentiment in a modern pluralistic, democratic society, including the varieties of religious experiences in contemporary America will be reviewed.

RELS 335. The American Jewish Experience. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The religious, social and cultural structure of American Jewry from the Colonial era to the present.

RELS 336. Religions in Latin America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary survey of the major religious groups of Latin America, with a focus on the development of Catholicism, Protestantism and the traditions of the African diaspora, such as Santeria and Voduo, during the 20th century.

RELS 337. Contemporary Cults and New Religious Movements. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of contemporary religious movements. Focuses on new groups that have emerged in the context of globalization. Involves understanding of what gives rise to these movements, how they are distinctive and how they develop.

RELS 340. Global Ethics and the World's Religions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts toward a global ethic. Crosslisted as: INTL 341.

RELS 350. World Classics of Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism and other religious traditions. Crosslisted as: INTL 360.

RELS 360. Sociology of Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population. Crosslisted as: SOCY 360.

RELS 361. The Bible as Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible. Crosslisted as: ENGL 361.

RELS 362. Shakespeare and Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the religious ideas in selected plays by William Shakespeare and their relevance to contemporary religious thought and experience. Topics include the nature of God, the meaning of life, the problem of evil, moral authority and the question of immortality as found in Shakespeare's plays.

RELS 363. Archaeology and Sacred Texts. 3 Hours.

Semester course; 3 lectures hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Explores past and present archaeological research as it relates to events, persons, and places described in ancient sacred texts of the Mediterranean.

RELS 371. Women in Islam. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200, RELS 108, GSWS 201 or ENGL 215. Critical study of the roles and rights of women in Islam. Crosslisted as: GSWS 371.

RELS 372. Global Women's Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: GSWS 372/INTL 372.

RELS 373. Gender and the Bible. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 108 or GSWS 201 or RELS 301 or RELS 302; and ENGL 215 or UNIV 200 or HONR 200. Studies the Hebrew and Christian scriptures with emphasis on gender. Attention to traditional, feminist, womanist and postcolonial interpretation. Crosslisted as: GSWS 373.

RELS 380. Global Catholic Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of the contemporary Catholic Christian response to the questions, "Who is God?" and "Where/how do we experience the Sacred?" Methods of Catholic theology will be explicated and applied to the teachings of the Second Vatican Council and current responses to those teachings in such areas as sacramental worship and liturgy and moral/ethical teachings of the Church.

RELS 391. Topics in Religious Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 6 credits. A study of a selected ideas or concepts, religious thinkers or significant movements in the field of religion. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

RELS 401. Faith and Life Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Open to students of any school or program. Explores the complex relationships between faith traditions and the life sciences. Topics include epistemology, impact of life sciences on ideas of fate and responsibility, limits of science and technology, and scientific and religious perspectives on human origins, consciousness, aggression, forgiveness, health, illness and death. Crosslisted as: LFSC 401.

RELS 407. Modern Jewish Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of the writings of the leading Jewish thinkers of the 19th and 20th centuries. Special reference will be made to the issues arising from the encounter of Judaism with the modern world: the nature of revelation and the authority of the Torah, the nature of God, the impact of the Holocaust, the meaning of redemption and the significance of the state of Israel.

RELS 408. Indian Tradition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: at least six credits from philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism and contemporary developments. Crosslisted as: PHIL 408.

RELS 409. Modern Islamic Thought and Global Trends. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the integral relationship of Islam to major events of global concern and contextualizes these events into the wider modern and postmodern developments of Islamic thought and its intellectual and ideological self-interrogation. This course will provide students with the opportunity to study both the background of modern Islamic thought and selected contemporary events. Crosslisted as: INTL 409.

RELS 410. The Chinese Tradition in Philosophy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: PHIL 410/INTL 410.

RELS 412. Zen Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: PHIL 412/INTL 412.

RELS 414. Incarceration and Spirituality: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment requires permission of the instructor. Experiential seminar held at a local correctional institution that connects students to residents as learning partners. Examines themes, topics and problems in the world religions and social justice supplementing theoretical studies with the lived experiences of inmates and university students. See the Schedule of Classes for specific topics to be offered.

RELS 422. Religion and Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different themes for a total of six credits. Prerequisite: UNIV 200 or HONR 200. Explores central themes present in all global religious traditions, such as ritual, faith, myth, suffering, redemption, the religious quest/pilgrimage, the nature of good and evil and perceptions of the sacred. Using readings from sacred texts and contemporary film critiques, the course juxtaposes ancient story and wisdom with contemporary narratives in film. Possible themes would include women and religion in world cinema, Christology in world cinema, and violence and redemption in film.

RELS 425. Religion, Magic and Witchcraft. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: ANTH 425/INTL 425.

RELS 430. Philosophy of Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIL 101, PHIL 103, PHIL 104, PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221 or PHIL 222. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality and the basis of authority. Crosslisted as: PHIL 430.

RELS 440. Mysticism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology and magic. Crosslisted as: PHIL 440.

RELS 441. Islamic Mysticism: the Sufis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the major Sufi masters and their works. It covers ideological and practical development of Islamic mysticism as compared to the developments within Islam itself. Crosslisted as: INTL 441.

RELS 442. Seminar in Hinduism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Hinduism, taking up the earliest origins of Hinduism, the Hindu creation myth, the various conceptions of the divine, the speculation regarding human nature, the stages of life, development of family and monastic codes, the great epics of Hinduism including the Bhagavad-Gita, the six schools of Hindu philosophy and modern Hinduism as it has developed in response to Western influences.

RELS 450. Religion, Globalization and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WRLD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the role religions are playing in the work of building a socially just and environmentally sustainable world community. Crosslisted as: INTL 449.

RELS 451. Religion, Racism and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WRLD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: AFAM 451/INTL 451.

RELS 453. Western Religions, Women and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: GSWS 453/INTL 453.

RELS 455. Catholic Ethics and Social Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 280 or 380, or RELS/INTL 312, or RELS 340/INTL 341; UNIV 200 or HONR 200. An exploration of the Catholic church's major theological, ethical, constitutional and strategic concerns, and an analysis of Catholic social teaching and its relation to current social issues such as abortion, peace and conflict, poverty, and human rights. Crosslisted as: INTL 456.

RELS 490. Senior Capstone Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341; senior standing in religious studies major with a minimum of 85 credits earned toward the degree. Senior research project; written thesis and oral presentations using established concepts, theories and research methods in religious studies. Students will select the religious groups/traditions as the focus of their research, writing and oral presentations in consultation with the course instructor.

RELS 491. Topics in Religious Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: written permission of instructor. An in-depth study of selected ideas or concepts, religious thinkers or significant movements in the field of religion. See the Schedule of Classes for specific topics to be offered each semester.

RELS 492. Independent Study. 1-4 Hours.

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. An independent study course to allow interested students in religious studies to do research in an area of major interest under the direction of a professor qualified in that field.

RELS 493. Religious Studies Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major. Prerequisites: completion of 9 credits of upper-level (300- or above) course work in religious studies, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in a local, national or international organization offering opportunities in religious studies.

RELS 499. Senior Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: RELS 340/INTL 341; senior standing in religious studies major with a minimum of 85 credits earned toward the degree. Pre- or corequisite: RELS 490. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation, and on the lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the religious studies program.

Russian (RUSS)

RUSS 101. Beginning Russian I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Russian to take the placement test to determine eligibility. For students with no prior knowledge of Russian. Beginning grammar, reading, writing and oral skills.

RUSS 102. Beginning Russian II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

RUSS 201. Intermediate Russian I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Russian. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

RUSS 202. Intermediate Russian II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Russian. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

RUSS 205. Intermediate Russian Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

RUSS 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 202, RUSS 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Russian. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

RUSS 311. Conversation and Media. 3 Hours.

Semester course; 3 semester hours. 3 credits. May be repeated for up to six credits with permission of the instructor. Prerequisite: RUSS 202 or 205. Conducted in Russian. An introduction to everyday life in Russia and topics of current interest. Students will explore diverse media to develop skills in listening, speaking, reading and writing.

RUSS 330. Literature and Culture: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for up to six credits with different topics. Prerequisite: RUSS 202 or 205. Conducted in Russian. Students will examine salient themes in Russian culture as expressed in a range of classic and contemporary texts. This course develops skills in reading, writing, speaking and listening. See the Schedule of Classes for specific topic to be offered each semester.

RUSS 422. Russian Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits with the permission of the instructor. Prerequisite: completion of six credits of Russian at the 300-level. Conducted in Russian. While the course is designed to develop the student's conversational skills in Russian, it will also provide practice in reading, listening and writing. Discussions will center on films from the Soviet and post-Soviet periods.

RUSS 491. Topics in Russian. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for maximum of 9 credits. An in-depth study of selected topics in Russian. See the Schedule of Classes for specific topics to be offered each semester.

Science, Technology and Society (SCTS)

SCTS 200. Science in Society: Values, Ethics and Politics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary introduction to the ethical, social and political dimensions of science, technology and medicine examined through case studies and debates.

SCTS 300. Introduction to Science and Technology Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: GVPA 399/HIST 399.

SCTS 301. Illness Narratives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. An overview of the history, interpretations and practices of reading and writing illness narratives – through case studies and theoretical perspectives, in fictionalized and nonfiction accounts, from the viewpoint of various actors (doctors, patients, patient families and their caregivers). Students will further examine the role of narrative knowledge in health care. Crosslisted as: ENGL 369.

SCTS 305. Contemporary Issues in STEM Fields. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Repeatable for a maximum of 3 credits. Examines contemporary topics in STEM (science, technology, engineering and mathematics) fields through the available public lecture events which take place on the VCU campus during a given semester. Lecture topics will vary from semester to semester but all will discuss recent work and broader issues related to science, technology, engineering, mathematics and medicine.

SCTS 392. Revolutions in Science I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from the ancient Greeks to 1800, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: HIST 392.

SCTS 393. Revolutions in Science II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from 1800 to the present, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: HIST 393.

SCTS 397. Genetics and Society: 1865 to the Present. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the science and technology of heredity in its historical, cultural and political contexts, emphasizing the ways in which genetic theories have been applied in attempting to solve social and biological problems. Crosslisted as: HIST 397.

SCTS 398. History of Medicine and Public Health: ____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different thematic content for a maximum of six credits. Studies in selected topics in the history of medicine, medical science or public health. Includes introduction to the interdisciplinary approaches practiced in the history of medicine as well as the historical content and relevant analytical skills needed to examine the specific course theme. Crosslisted as: HIST 398.

Social Science (SOCS)**SOCS 291. Issues in Social Science. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. An interdisciplinary course structured around social issues pertinent to today's society. See the Schedule of Classes for specific topics to be offered each semester and the semester credit for which each course will be offered.

SOCS 302. Diverse Families and Children in the United States. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on the diversity of family life in the United States. Students are encouraged to analyze and appreciate the differences that emerge from such factors as socioeconomic status, race and ethnicity (language, religion, national origin). Attention is given to the variations and commonalities in how parents teach, guide and influence children and adolescents.

SOCS 303. Marriage and Family Relationships. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Marriage and the family in contemporary society. Topics discussed will include the effects of masculine and feminine roles on marital and parent-child relationships, how role problems are resolved, sexual adjustments, financial adjustment, family planning and retirement.

SOCS 330. The Psychology and Sociology of Death. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 or SOCY 101. An interdisciplinary study of the encounter with death, death and personality, the organizational processing of death and demographic regularities of dying. Sociologists and psychologists jointly teach the course.

SOCS 340. Human Sexuality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the variety of the forms, sources and consequences of human sexual behaviors and the attitudes, beliefs and values associated with them. The data and its analysis are directed to the significance of sex in human experience.

SOCS 350. The Construction of Culture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination, using methods from several disciplines, of the ways in which human beings construct the shared meanings that constitute culture.

SOCS 389. AIDS: Myths and Realities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Presents the students with the fundamentals of infectious disease, immunology and virology as they apply to HIV disease. Students will trace the psychosocial impact the HIV pandemic has had on society since the early 1980s, and will explore the future possibilities for those who are HIV infected and/or HIV affected.

SOCS 391. Topics in Social Science. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum total of 6 credits. An interdisciplinary course structured around an in-depth study of selected social issues pertinent to today's society. See the Schedule of Classes for specific topics and credits to be offered each semester.

Sociology (SOCY)**SOCY 101. Introduction to Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of human society. The basic concepts of society and culture and their relationships to each other are studied and then used to analyze the major social institutions.

SOCY 104. Sociology of Racism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation and as a form of human conflict. The central focus of interest will be on black-white relationships. Crosslisted as: AFAM 104.

SOCY 202. Foundations of Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An introduction to classical theoretical traditions that have guided sociological work. Classical theorists whose writings have shaped the discipline will be studied, including Karl Marx, Max Weber, Emile Durkheim, Georg Simmel, W.E.B. Du Bois and Charlotte Perkins Gilman. This course also traces the historical development of the discipline of sociology during the 19th and early 20th centuries.

SOCY 250. Confronting Climate Crisis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the many ways that people – including students – are confronting the climate crisis, from the local to the global. Engages with major debates in the fight to understand and address climate crisis, centering ways in which Black, migrant, Indigenous peoples and folks in the Global South are forging a path toward socially just responses. Crosslisted as: INTL 250.

SOCY 302. Contemporary Social Problems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. The examination from a sociological perspective of contemporary social problems such as population growth, crime, racism, family problems, substance abuse and aging in terms of their impact on American social institutions and values.

SOCY 303. Sociology of Deviance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An analysis of the relationship between social structure, social control and patterns of social deviance; a survey and critique of present social theories in light of empirical research and application of the theories to selected problem areas.

SOCY 304. Sociology of Families. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: ANTH 304/GSW 304.

SOCY 305. African American Family in Social Context. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: AFAM 305/GSW 305.

SOCY 307. Sociology of Food. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Examines the role food plays in shaping cultures, societies and social inequalities by examining the modern food system, social inequalities surrounding food access and alternatives to the current system.

SOCY 310. Social Movements and Social Conflict. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Theory and practice of social movements, community organizing and other forms of collective behavior.

SOCY 315. Sociology of Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of education as a social institution in the societal context. Cross-cultural comparative perspectives on education.

SOCY 320. Research Methods in the Social Sciences. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: SOCY 101; and STAT 210 with a minimum grade of C. Current methods of research in the social sciences. Includes a brief introduction to the use of SPSS for storage, retrieval and exploration of social science data.

SOCY 321. Sociology of Economic Inequalities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of social mobility, class, status and power.

SOCY 322. Sociology of Race and Ethnicity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A study of the various racial, religious and ethnic minority groups. Issues of power, pluralism and assimilation are addressed as well as the relationship between subcultures and the dominant culture.

SOCY 325. Analysis of Sociological Data. 2 Hours.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: POLI/SOCY 320 and STAT 210. Statistical techniques used in the analysis of data from sample surveys and censuses, including tabular, graphical and inferential procedures. SPSS software will be used in the laboratory.

SOCY 326. Rural Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An introduction to rural society, culture, social interactions and systemic change. The rural regions of the United States will be covered, but emphasis will be given to Appalachia, rural Virginia and the South.

SOCY 327. Urban Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Origin, character and significance of urban communities. Ecological and social factors are analyzed as well as changes in urban social organization and their consequences.

SOCY 330. Global Societies: Trends and Issues. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic and political relations, and an inquiry into implications of these developments for individuals, localities, nations and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations. Crosslisted as: INTL 330.

SOCY 331. Juvenile Delinquency. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of the biological, cultural, psychological and social factors involved in juvenile delinquency and their relation to current techniques of treatment, prevention and control.

SOCY 332. Immigration and American Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An examination of the social and political dynamics surrounding U.S. immigration. Possible topics include examination of why people migrate, historical changes in U.S. immigration, policies that let some people in and keep others out, and consideration of the lives of immigrants once they have settled in the country.

SOCY 333. Gender in Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Explores different theoretical approaches to gender and its intersections with other sources of inequality, including sexuality, race, class and age. Possible topics include masculinities, gender and the body, and how gender operates in various institutional settings, such as the economy and the family. Crosslisted as: GSWS 333.

SOCY 334. Sociology of Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized. Crosslisted as: GSWS 334.

SOCY 335. Sociology of Masculinities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Examines the sociological theories and empirical studies of men and masculinities. Topics include the relational thinking of gender inequality, hegemonic masculinity, subordinated masculinities, inclusive masculinity, hybrid masculinity, toxic masculinity, female masculinity and male femininity, and intersectional masculinities. Addresses the effects and mechanisms of masculinities in social settings, such as the workplace, family, marriage, intimacy, pop culture, politics, migration, globalization and social movements, through empirical studies.

SOCY 336. Violence Against Women. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or GSWS 201. An examination of violence against women from a global and local perspective with a primary focus on violence perpetrated against women in the U.S. Requires a minimum of 20 hours of community service. Crosslisted as: GSWS 336.

SOCY 340. Self and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An exploration of sociological theories of everyday life, including examination of the socialization process, as well as how thoughts, feelings and behaviors are guided by micro-level social forces that often remain just outside of awareness. Particular attention will be given to those qualities that make individuals uniquely human – including self-awareness, identity, emotions, empathy, language and symbols.

SOCY 341. Group Dynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself. Crosslisted as: PSYC 341.

SOCY 344. Medical Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A survey of the social, economic, cultural and social psychological factors in health and illness; the sociology of health and medical care organizations and settings; the sociology of health occupations; and the techniques of research in medical sociology.

SOCY 350. Environmental Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An overview of the field of environmental sociology, with a specific focus on the ways in which climate change affects, and is affected by, modern society. Possible topics include environmental racism, indigenous rights and activism, cultures of waste and disposability, capitalism and ecological transformation, corporate greenwashing, global food-systems, and climate refugees.

SOCY 360. Sociology of Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population. Crosslisted as: RELS 360.

SOCY 370. Media and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101, MASC 101 or POLI 103. A survey of the organization and social impact of the major types of mass media. Potential topics include the media as socializing agents; the effect of media messages on cultural patterns and social values; the impact of technology on social behavior; the role of "audiences" in interpreting media content; political and economic influences on the media industry; and the media as an instrument of social change. The structure and functions of the media in different societies will be compared.

SOCY 380. Public Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Examines what it means to "do sociology" in public and what it means to make sociological work accessible and to involve multiple publics. Particular attention is paid to conceptualizing the term public sociology; public sociology in practice, including on college campuses; and critical digital literacy.

SOCY 391. Topics in Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Maximum 6 credits per semester; maximum total of 18 credits in all departmental topics courses that may be applied to the major. Check with department for specific prerequisites. A discussion of specialized areas of sociological interest. See the Schedule of Classes for specific topics to be offered each semester.

SOCY 401. Racial and Ethnic Health Disparities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of the instructor. Explores issues surrounding the disparities in morbidity and mortality experienced by racial/ethnic minority groups, including the impact of structural racism, socioeconomic status, legal status, neighborhood conditions and access to health care. Also examines potential strategies for working toward health equity. Students are required to participate in an experiential exercise designed to enhance learning.

SOCY 402. Contemporary Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 with a minimum grade of C; pre- or corequisite: SOCY 320. Restricted to sociology majors. A study of the works of the major sociological theorists of the 20th century.

SOCY 403. Criminology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. Analysis of the nature, extent and distribution of crime, emphasizing theories of and research on causation, prediction and prevention.

SOCY 406. Sociology Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SOCY 202 and SOCY 320, both with a minimum grade of C; and at least 21 credit hours in sociology. Course must be taken in the student's last 30 hours at VCU. Pre- or corequisite: SOCY 402. Senior capstone class; provides students the opportunity to synthesize, integrate and apply their sociological knowledge and skills.

SOCY 410. Aging and the Life Course. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. An introduction to the study of aging and the life course. Focus will be on research specific to older adulthood in order to foster an understanding of aging and old age as a characteristic of both individuals and societies. Requires a minimum of 20 hours of community service if taken as a service-learning course.

SOCY 420. Environmental Racism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. Examines the sociological study of environmental racism and the rise of the environmental justice paradigm through the scholarly lenses of environmental sociology, political sociology, critical race theory and environmental justice studies. Key environmental histories, social theories and case studies of environmental racism as well as the broader problem of environmental inequality will be explored.

SOCY 421. Advanced Research. 1-6 Hours.

Methods Semester course; variable hours. Variable credit. May be repeated for a total of 6 credits. Prerequisites: POLI 320/SOCY 320 and SOCY 325. A laboratory course providing training in the application of social research methods under laboratory and field situations to problems of mutual interest to community policy makers and professionals in the disciplines of sociology, social psychology and anthropology. This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to the tasks of defining, designing and executing research projects.

SOCY 425. Digital Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. An exploration of the sociological foundations of digital technologies including apps, platforms and social media. Focus will be on the ways in which people's use of digital technologies configures their sense of self and their embodiment of social relations, as well as the role of digital media in the creation or reproduction of social institutions and structures.

SOCY 426. Population Dynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. The study of trends in fertility, mortality, population growth, distribution, migration and composition. The mutual influences of these factors and social organization.

SOCY 430. Politics, Power and Ideology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. Sociological analysis of political organization and behavior. Such subjects as distribution and uses of power, creation and management of group conflict, development and diffusion of political ideologies, and problems of bureaucracy and mass society will be considered.

SOCY 434. Sociology of Sport. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. Sport will be viewed as a major social institution within many societies. The class will study the relationship between sport and society – both in terms of sport reflecting the ideology and culture of society and sport as an active agent of change in society. Race, gender and social class will be examined within the context of sport.

SOCY 435. Sociology of Consumption. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. Examination and analysis of consumption in modern society, including food, fashion, advertising and opportunities for consumer activism in a globalized world.

SOCY 436. Sociology of Work and Labor Markets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. The study of industrial plants and business organizations as social systems.

SOCY 440. Advanced Social Psychology. 3 Hours.

Semester course; 3 credits. Prerequisites: SOCY 202 and SOCY 340 or permission of instructor. The study of how human groups create the environment that, in turn, influences their individual behavior. The symbolic interactionist perspective will be thoroughly explored for its contribution to the study of persons, objects and meaning.

SOCY 441. Sociology of Emotions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. Exploration of the sociological forces that shape the way we define our emotions, how we communicate through emotions – both explicitly and implicitly – and how our emotions are guided by sociocultural norms. Attention will also be paid to the regulation of human emotions in terms of culture, gender, occupation and interpersonal relationships.

SOCY 446. Sociology of Mental Disorder. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. A survey of selected social, economic, cultural and social psychological factors in mental health and illness. Such problems as defining mental illness; social factors in the distribution, diagnosis, etiology and treatment of mental disorders; mental illness as a social role; and research methods used in the sociology of mental illness will be considered.

SOCY 450. Understanding Capitalism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. A critical appraisal of modern capitalist society. Classical and contemporary sociological theory, focusing on comparative-historical methodologies, including historical materialism and critical political economy.

SOCY 476. Economic Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. An examination of labor force participation in terms of the individual worker's experience, the work setting, the nature of occupations and labor force composition.

SOCY 491. Topics in Sociology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. Maximum 6 credits per semester; maximum total of 18 credits in all departmental topics courses that may be applied to the major. Check with department for specific prerequisites. A discussion of specialized areas of sociological interest. See the Schedule of Classes for specific topics to be offered each semester.

SOCY 492. Independent Study. 1-6 Hours.

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be received prior to registration of the course. Cannot be used in place of existing courses.

SOCY 493. Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits (50 hours per credit). May be repeated for a maximum of 3 credits. Prerequisites: SOCY 101 and SOCY 202. Enrollment is restricted to sociology majors of junior or senior standing. Applications must be approved by the internship coordinator. Provides an opportunity to apply and expand sociological knowledge through actual experience in a variety of work settings. Graded as pass/fail.

SOCY 498. Honors Research Course. 3 Hours.

Semester course; 3 credits. Prerequisites: student must be in the honors program of the department and have achieved senior status. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in sociological/anthropological analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of a faculty mentor.

Spanish (SPAN)**SPAN 101. Beginning Spanish I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires any student with previous exposure to Spanish to take the placement test to determine eligibility. For students with no prior knowledge of Spanish. Beginning grammar, reading, writing and oral skills.

SPAN 102. Beginning Spanish II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 101 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Continuation of beginning grammar, reading, writing and oral skills.

SPAN 201. Intermediate Spanish I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 102 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Spanish. Building toward intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

SPAN 202. Intermediate Spanish II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Spanish. Increasing intermediate-level cultural competence and proficiency in listening, speaking, reading and writing through authentic materials.

SPAN 205. Intermediate Spanish Conversation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

SPAN 300. Communication and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 202, SPAN 205 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Spanish. Building toward intermediate-high proficiency in the three modes of communication: interpretive, interpersonal and presentational. Authentic materials enhance intercultural competence and communication skills.

SPAN 301. Self and Society: Effective Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300. Conducted in Spanish. Students advance their knowledge of the Spanish language and Spanish-speaking cultures while developing their reading and writing skills. Students examine a variety of texts and media and gain strategies for interpretation and discussion, with a focus on effective writing.

SPAN 302. Literary Readings and Composition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300. Conducted in Spanish. An introduction to literary genres, stylistics and analysis designed to increase the student's mastery of persuasive, descriptive and narrative skills, including creative writing.

SPAN 305. Oral Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 202, SPAN 205, SPAN 300 or a satisfactory score on the VCU Language Placement Test within the one-year period immediately preceding the beginning of the course. Conducted in Spanish. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

SPAN 307. Spanish Conversation and Film. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: SPAN 202, SPAN 205 or SPAN 300. Designed to develop the student's conversational skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected Spanish and Latin American films. Emphasis is also placed on vocabulary development and writing practice.

SPAN 311. Spanish Through the Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 202, SPAN 205 or SPAN 300. Further development of listening, reading, writing, speaking and cultural skills through a focus on mass media in Latin America and Spain. Spanish language and current events will be taught through direct contact with newspapers, journals, television and radio programming, and online media. Students will view programs outside of class, participate actively in class discussions, create presentations and conduct research.

SPAN 320. Civilization of Spain I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A treatment of salient manifestations of Spanish culture and civilization from its origins to the present.

SPAN 321. Latin American Civilization I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A treatment of salient manifestations of Latin American culture and civilization from pre-Columbian times to the present.

SPAN 322. Hispanic Immigrants in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. Analysis, research and discussion of the life and history of Hispanics in the U.S. Topics such as identity, assimilation, immigration laws, education, jobs, housing, health, religion and politics will be covered. Students will apply their course learning through 15 hours of community service for Hispanics.

SPAN 330. Survey of Spanish Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A survey of Spanish literature up to the present.

SPAN 331. Survey of Latin American Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. An introduction to major authors and trends up to the present. Crosslisted as: INTL 331.

SPAN 332. Latino Writers in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. Explores Latino cultural identity and the Latino contribution to U.S. cultural life through a variety of works in the different literary genres produced by Latino writers, both immigrants and those raised in the U.S.

SPAN 402. Language Issues in the Spanish-speaking World. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking world. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: LING 402.

SPAN 403. History of the Spanish Language. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. A study of the evolution of Spanish from Latin through the Middle Ages to the Modern era. Historical phonology, etymology, morphology, orthography, semantics and syntax of standard Castilian. See the Schedule of Classes for the specific topic to be offered each semester.

SPAN 414. Commercial Spanish. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. This course will develop the student's ability to use the Spanish language as a means of oral and written communication in the business world. See the Schedule of Classes for the specific topic to be offered each semester.

SPAN 420. Civilization of Spain II. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. This course explores the cultural diversity and differences of Spain. Topics focus on a particular interdisciplinary theme, such as the formation of cities, ethnicity and on a particular area of Spain. See the Schedule of Classes for the specific topic to be offered each semester.

SPAN 421. Civilization of Latin America II. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. This course explores the cultural diversity of Latin America and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity and on a specific area of Latin America. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: INTL 421.

SPAN 422. Spanish and Latin American Cinema. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different themes, up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. Spanish and/or Latin American cinema from the 1940s to the present, including the works of important directors, such as Bunuel, Saura, Almodovar, Emilio Fernandez, Glauber Rocha, Solanas or Gutierrez-Alea. The formal and aesthetic issues of cinematic texts and the historical, cultural and social contexts of their production. See the Schedule of Classes for the specific theme to be offered each semester.

SPAN 430. Literary Genres. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. An in-depth look at the development and expression of varieties of literature in Spanish. See the Schedule of Classes for the specific topic to be offered each semester.

SPAN 431. Literary Periods. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. An in-depth synchronic look at movements and their context in literature in Spanish. See the Schedule of Classes for the specific topic to be offered each semester.

SPAN 432. Hispanic Culture Through Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. An in-depth analysis of Hispanic texts dealing with cultural topics such as love relationships, death, family, religion, politics, gender and ethnicity, as well as their relationships to cultural values, behaviors, ideologies, beliefs and the histories of Spain and Spanish America.

SPAN 433. Don Quixote. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. An in-depth analysis of Miguel de Cervantes's masterpiece. Focuses on questions of the literary, linguistic and cultural complexity of "Don Quixote." Examines the work in the social and historical context of Early Modern Spain.

SPAN 485. Spanish Study Abroad. 1-12 Hours.

Semester course; 1-12 lecture hours. 1-12 credits. May be repeated for a maximum of 12 credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. This course offers all students the opportunity to improve their oral and written proficiency in Spanish, to enhance their awareness of cultural diversity and to become independent learners of Spanish language and the cultures of its speakers.

SPAN 491. Topics in Spanish. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. An in-depth study of selected topics in Spanish. See the Schedule of Classes for specific topics to be offered each semester.

SPAN 492. Independent Study. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. Maximum of three credits per semester; may be repeated for total of six credits. Prerequisites: SPAN 301; and SPAN 320, SPAN 321, SPAN 322, SPAN 330, SPAN 331 or SPAN 332. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

Spanish/English Translation and Interpretation (SETI)**SETI 400. Spanish-English Comparative Grammar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 320, 321 or 322; and SPAN 330, 331 or 332; or a score of "advanced" on the Avant STAMP assessment test. Conducted in Spanish and English. Advanced comparison of English and Spanish grammar with emphasis on the more complex forms of both languages.

SETI 410. Introduction to Spanish-English Translation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 320, 321 or 322; and SPAN 330, 331 or 332; or SETI 400; or a score of "advanced" on the Avant STAMP assessment test. Integrates the basic theory and practical aspects of translation from a perspective of applied linguistics. Practice given in both written and oral translation of diverse text types.

SETI 411. Intermediate Translation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 410. Course conducted in Spanish and English. Exposes students to more advanced translation skills, introducing a more focused vocabulary for the legal, medical, business and educational fields that regularly use translation. Introduces students to professional associations and journals of the industry, including those dedicated to literary translation. Analyzes pros and cons of computer-assisted translations.

SETI 420. Introduction to Spanish-English Interpretation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 320, 321 or 322; and SPAN 330, 331 or 332; or SETI 400; or a score of "advanced" on the Avant STAMP assessment test. Course conducted in Spanish and English. Covers theory and practical aspects of interpretation, including the three modes of interpretation: simultaneous, consecutive and sight translation.

SETI 421. Intermediate Interpretation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420. Conducted in Spanish and English. Exposes students to more advanced interpreting skills in all three modes of interpretation – simultaneous, consecutive and sight translation – introducing a more focused vocabulary for the legal, medical, business and educational fields that regularly use interpreters.

SETI 422. Legal Interpretation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420 or permission of instructor. Conducted in Spanish and English. Students with interpreter and/or translator certification or a combined Avant STAMP Assessment test score of 1300 are encouraged to seek permission of the instructor to register for this course. Exposes students to the ethics, regulations and advanced vocabulary used in legal interpreting, with a focus on the state examination for certification in the court system.

SETI 423. Medical Interpretation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420 or permission of instructor. Conducted in Spanish and English. Students with interpreter and/or translator certification or a combined Avant STAMP Assessment test score of 1300 are encouraged to seek permission of the instructor to register for this course. Exposes students to the ethics, regulations and advanced vocabulary used in medical interpreting. Explores the range of accreditation bodies and history of national and international certification in the medical interpreter profession, with the goal of grooming students for careers in this field.

SETI 491. Topics in Spanish-English Translation and Interpretation. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Prerequisites: SETI 410 and SETI 420. A study of selected topics in Spanish-English translation. Conducted in Spanish and English.

SETI 493. SETI Internship. 3 Hours.

Semester course; 120 clock hours in local, national or international internship placement where Spanish-English language interpretation or translation is required. 3 credits. Prerequisites: SETI 410 and SETI 420. Under the supervision of both a faculty member and a field supervisor, students will apply their translation and/or interpretation skills in an approved work situation. Each internship will be specifically designed in accordance with the student's linguistic level and the placement site requirements.

Statistical Sciences**STAT 206. Data Analysis and Statistics for Elementary Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students majoring in liberal studies for early and elementary education who have received a passing score on the PRAXIS I exam. Understanding probability, describing data both graphically and numerically, regression/correlation, common distributions and interpretation, item analysis for tests, interpreting test scores and educational studies, experimental design and limitations, comparing results using t-tests. This course relies heavily on using a graphing calculator as a data-analysis tool. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

STAT 208. Statistical Thinking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or a minimum grade of C in MATH 131, MATH 141, MATH 151, MATH 200 or MATH 201. An exploration of the use of statistics in the world around us through in-depth case studies. Emphasis is on understanding statistical studies, charts, tables and graphs frequently seen in various media sources. Some lectures involve activities centered on case studies. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

STAT 210. Basic Practice of Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or MATH 131, MATH 141, MATH 151, MATH 200 or MATH 201. Designed for students who will likely take another quantitative reasoning course for which statistics may be a prerequisite. Not open to mathematical sciences or computer science majors. Topics include examining distributions, examining relationships, producing data, sampling distributions and probability, introduction to inference. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

STAT 212. Concepts of Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or MATH 151, MATH 200 or MATH 201. Introductory statistics course with an emphasis on descriptive statistics, correlation and regression, probability, normal distributions, t distributions, and statistical inference. Graphing calculators will be used extensively. A core course for mathematical sciences. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

STAT 291. Topics in Statistics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. Specific topics may fulfill general education requirements. See the Schedule of Classes for specific topics and prerequisites.

STAT 305. Intermediate Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200 and STAT 212, or their equivalents. A study of intermediate-level statistical inference procedures, including categorical data analysis, analysis of variance, multiple regression and nonparametric procedures. Students may receive credit toward graduation for only one of STAT 305 or STAT 314.

STAT 309. Introduction to Probability Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307 and either MATH 211 or MATH 300. A study of the mathematical theory of probability, including finite and infinite sample spaces, random variables, discrete and continuous distributions, mathematical expectation, functions of random variables and sampling distributions.

STAT 310. Introduction to Statistical Inference. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212 and STAT 309, or permission of instructor. Framework for statistical inference. Point and interval estimation of population parameters. Hypothesis testing concepts, power functions, Neyman-Pearson lemma and likelihood ratio tests. Elementary decision theory concepts.

STAT 314. Applications of Statistics. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: STAT 210 or 212. A study of the concepts and application of statistical methods including: estimation and hypothesis testing for two sample problems; one factor analysis of variance and multiple comparisons; randomized block designs and analysis; inferences on categorical data, including chi-square test for independence for contingency tables; simple linear regression and correlation; multiple linear regression. Special topics include distribution-free (nonparametric) methods in various statistical problems, two factor analysis of variance and the use of a statistical software package for data analysis. Students may receive credit toward graduation for only one of STAT 305 or STAT 314.

STAT 321. Introduction to Statistical Computing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212 and MATH 200 or their equivalents. The application of computers and computing software to statistical concepts using R, SAS and other quantitative software. Topics include data storage and retrieval, data modification and file handling, standard statistical analyses, graphical representations, practical presentation of results.

STAT 391. Topics in Statistics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: because of the changing subject matter to be treated in this course, permission of the instructor is required. A study of selected topics in statistics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

STAT 403. Introduction to Stochastic Processes. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307 and STAT 309. Introduction to the theory of stochastic processes and their applications. In-depth studies of random variables, conditional probability and conditional expectation. Topics include Markov chains, random walks, Poisson processes, birth and death processes and applications to classical problems (e.g., gambler's ruin, physics, etc.).

STAT 415. Statistical Consulting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321, or their equivalents. An introduction to the techniques of statistical consulting. Topics include applying statistical concepts to real-world scenarios, dealing with messy data and communicating results.

STAT 421. Applied Statistical Computing Using R. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 310 and either STAT 305 or STAT 314, or their equivalents. Completion of STAT 321 is strongly recommended. Introduction to object-oriented programming in the R environment for use with statistical analyses. Topics include basic algorithms in R and applications involving random number generation, parametric and non-parametric data analysis and inference, linear models, simulation, and advanced data manipulation.

STAT 422. Structured Problem Solving Using Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 314, PSYC 214 or SCMA 302, or permission of instructor. Focuses on using analytic frameworks and applying statistics to solve problems in a real-world environment. Topics include discussion of analytical frameworks, problem restatement, divergent/convergent thinking, causal flow diagramming, the matrix method, decision tree analysis, review of sampling, confidence intervals, regression, ANOVA, chi squared tests, as well as applications of these concepts to solve case studies.

STAT 423. Nonparametric Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321. Introduction to statistical estimation and inference methods that require relatively mild assumptions about the underlying population distribution. Topics include classical nonparametric hypothesis testing methods, permutation tests, bootstrap methods and density estimation.

STAT 425. Multivariate Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310, STAT 309, and either STAT 305 or STAT 314. Completion of STAT 421 is strongly recommended. Introduction to multivariate statistical analysis methods. Topics include multivariate probability distributions and their properties, conditional and marginal distributions, multivariate normal distribution, Hotelling's T² distribution, multivariate analysis of variance, repeated measures, multivariate regression, principle component analysis, exploratory factor analysis, linear discriminant analysis, cluster analysis, and regression trees. Students will use modern statistical software to perform these analyses.

STAT 435. Industrial Statistics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 309; and STAT 305 or STAT 314. Introduction to statistical methods for quality control and process improvement. Topics include special versus common causes of variation, statistical thinking in industrial settings, Shewhart control charts, capability analysis, components of variation, design of experiments and response surface methods. Incorporates use of statistical software.

STAT 441. Applied Statistics for Engineers and Scientists. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 or equivalent. An introduction to applied statistics intended primarily for students in engineering. The fundamental ideas about the collection and display of information, descriptive statistics and exploratory data analysis, elementary probability theory, frequency distributions, and sampling are covered. Other topics include tests of hypotheses and confidence intervals for one and two sample problems; ANOVA; principles of one-factor experimental designs including randomized complete block designs, fixed and random effects and multiple comparisons; correlation and linear regression analysis; control charts; contingency tables and goodness-of-fit. Statistical software is used extensively in this course, so a working knowledge of computers is necessary. Students may receive degree credit for only one of BIOS 543, STAT 441, STAT 541, STAT 543 or STAT 641.

STAT 443. Regression. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321, or permission of instructor. Completion of MATH 310 is strongly recommended. Introduction to the concepts and methods of linear regression, logistic regression, and other nonlinear regression models. Topics include model development and assumptions, estimation of model parameters, statistical inferences about the regression model, selection of an appropriate model, and diagnostics regarding multicollinearity and influence points. Applications involve the use of a statistical software package.

STAT 475. Time Series. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 321 and either STAT 305 or STAT 314. Completion of STAT 421 is strongly recommended. Introduction to the modeling of univariate time series data. Topics include simple and exponential moving averages, Brown's double exponential smoothing, Holt-Winters model, autocorrelation, partial autocorrelation, autoregressive integrated moving average models, seasonal autoregressive moving average models, harmonic analysis and time series regression. Students will use modern statistical software to perform these analyses.

Statistical Sciences and Operations Research (SSOR)**SSOR 490. Developing Professional Skills in Operations Research and Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; either OPER 427 and OPER 428, or STAT 321 and either STAT 305 or STAT 314. Capstone course designed to help students apply analysis techniques and attain proficiency in professional and academic communication in the context of statistics and operations research. Focuses on the discipline-specific skills necessary to excel in careers or graduate studies in these disciplines.

SSOR 492. Independent Study. 2-4 Hours.

Semester course; variable hours. 2-4 credits. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration in the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

SSOR 493. Internship. 3 Hours.

Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Enrollment restricted to mathematical sciences/statistics and mathematical sciences/operations research majors only with junior or senior standing. Admission by permission from the department chair. Through placement in a position in business, industry, government or the university, the student will serve as an intern in order to obtain a broader knowledge of statistics or operations research techniques and their applications.

SSOR 495. Expositions in Statistical Sciences and Operations Research. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: SSOR 490. Capstone course designed to help students obtain proficiency in professional writing and presentation skills. The students will present, both orally and in writing, the findings from their capstone projects.

University Studies (UNVS)**UNVS 291. Interdisciplinary Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits per semester. Maximum total of 8 credits in all university studies courses. An interdisciplinary course designed to give the student an overview of a topic not associated with a particular discipline.

World Studies (WRLD)**WRLD 203. Cultural Texts and Contexts: _____. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Through the analysis and interpretation of literary, cinematic and other cultural texts, this course explores the ways cultural and national identities have been shaped, imagined and contested in various regions of the world. While responding to the readings and films as artistic manifestations or social documents, students will also become familiar with the aesthetic, political and social contexts in which the works were and are produced. See the Schedule of Classes for specific topics to be offered each semester.

WRLD 210. International Social Justice Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of the issues, themes, disciplines, and areas of research and teaching that comprise international social justice studies in a variety of global contexts.

WRLD 220. Human Rights and Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A cross-cultural survey of human rights violations. The moral, political and pragmatic dimensions in the international response to violations are investigated including transnational organizations that document abuses as expressed in memoirs, eyewitness accounts, literature and film.

WRLD 230. Introduction to World Cinema. 3 Hours.

Semester course; 5 lecture/screening hours. 3 credits. An overview of the main theoretical frameworks, critical concepts and debates devoted to non-Hollywood world cinemas, with special emphasis on the rethinking of national cinema and the problematizing of identity in an increasingly transnational era. Broad interdisciplinary readings in film theory, film history and cultural studies will be supplemented by case studies of particular cinemas and filmmakers, so as to convey an appreciation of the main international movements in the history of cinema.

WRLD 291. Topics in World Languages and Cultures. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. A study of a specialized topic in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester.

WRLD 294. Foundations in Experiential Research. 1-2 Hours.

Semester course; 1-2 research hours. 1-2 credits. Prerequisites: UNIV 200 or HONR 200; minimum of 9 credit hours earned in a specified field within the School of World Studies. Enrollment requires permission of the faculty supervisor. Introduces students to directed study of research processes undertaken in a specified field. Guides students through various phases of a research project (design, data collection, data analysis, manuscript writing) in conjunction with a School of World Studies faculty member. Provides students the opportunity to pursue research activity from the onset of their academic careers. Designed to prepare students for a progression of research engagement. Graded as pass/fail.

WRLD 302. Communicating Across Cultures. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to increase understanding of the foundational concepts of communication and intercultural dialogue. Examines (among others) such concepts as individualism, collectivism, ethnocentrism, xenophobia, uncertainty avoidance, nonverbal communication and stereotyping.

WRLD 311. Civilization of the Mediterranean. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Exploration of the Mediterranean from pre-history to modernity, with an emphasis on cross-cultural engagement. Aims at exploring the interaction and cross-cultural fertilization between societies and cultures of the lands of the Middle Sea: North Africa, Middle East and southern Europe.

WRLD 330. Introduction to Film Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: WRLD 230 or permission of instructor. An overview of film studies with special attention given to the debates informing the periodization of film history, the critical paradigms of the major film theories and the elements of a cinematographic language from both a technical and aesthetic standpoint.

WRLD 359. International Media Coverage: The Middle East. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101 or MASC 151 with a minimum grade of C. This interdisciplinary course explores the media's role in covering cultural, political, religious and other issues in the Middle East. Students will examine the role and impact of the media in both the United States and Middle East in shaping global and regional public opinion. Using webcam and online technology, VCU students will discuss cross-cultural perspectives with students from the other U.S. universities and universities in the Middle East. Crosslisted as: MASC 359.

WRLD 391. Topics in World Languages and Cultures. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. An in-depth study of a specialized topic in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

WRLD 394. Research Assistantship. 1-3 Hours.

Semester course; 1-3 research hours. 1-3 credits (40 clock hours/credit). Prerequisites: UNIV 200 or HONR 200; minimum of 18 credits, including 12 upper-level, earned within a specified discipline in the School of World Studies. Enrollment requires permission of the faculty mentor. Engages students in research processes undertaken in their field. Intended for advanced students capable of undertaking more complicated projects, but not yet prepared for 400-level independent study or internship. Students will work on various phases of a research project (design, data collection, data analysis, manuscript writing) under a School of World Studies faculty mentor's close supervision. Designed to enhance the student's career pursuits for either graduate-level training or post-baccalaureate employment. Meets the experiential learning requirement for the School of World Studies. Graded as pass/fail.

WRLD 422. National Cinema. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different themes up to a total of 6 credits. Prerequisite: WRLD 230 or 330 or permission of instructor. Tracing the development of cinematic traditions in selected nations, this course focuses on the thematic selections and stylistic techniques particular to that particular cinematographic culture. See the Schedule of Classes for the specific theme to be offered each semester.

WRLD 430. Film and the City. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Focuses on cinematic representations of cities worldwide, so as to probe the increasingly cross-cultural dynamics of urban landscapes. Films discussed will span the entire history of cinema across genres and national traditions.

WRLD 490. Seminar in World Cultures and Languages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Restricted to seniors in world cultures and languages with at least 85 credit hours earned toward the degree. Research and analysis of a selected topic in world cultures and languages in a seminar setting.

WRLD 491. Topics in World Languages and Cultures. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. An intensive and comprehensive examination of specialized areas of interest in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

WRLD 493. World Cultures Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major concentration. Prerequisites: completion of 9 credits of upper-level (300- or above) course work toward any non-foreign-language concentration within the School of World Studies, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in internationally oriented public and private organizations and agencies.

WRLD 499. Senior Capstone Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: completion of 6 credits of 400-level courses in the major and senior standing. Open only to students enrolled as majors in the School of World Studies, including anthropology, religious studies, and world cultures and languages. Capstone seminar summarizing and synthesizing studies in World Studies programs. Preparation for entry into career search. Organization and polishing of written works representing skills acquired in programs. Assembly of individual portfolio as means of assessment and career tool.

School of the Arts

Advanced Media Production Technology (AMPT)

AMPT 401. Listen and Capture. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Foundational studio course in audio production that covers acoustics, audio physics and history, and equipment and technologies used in recording and editing.

AMPT 402. Editorial Storytelling. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Introductory studio course on motion visual editing techniques, exploring non-linear editing software, film editing history, color techniques, and basic visual effects including animation.

AMPT 403. Emerging Digital Cinema. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores how traditional film and video production has been transformed by new technologies, including DSLR and high resolution RED cameras, teleprompting, green screen techniques.

AMPT 404. Script. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course on screen writing and story development, exploring traditional linear and non-linear plot development.

AMPT 422. Audio for Gaming. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that focuses on proper recording and formatting of music and sound effects within the context of video game production.

AMPT 423. Motion Graphics. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that focuses on visual effects including titles, preparing clips for a video editor, and generating computer based animation.

AMPT 424. Music Production Techniques. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores music production for modern styles of popular and alternative acoustic music, particularly virtual instruments, loops and vocal production techniques.

AMPT 425. Light. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that examines lighting requirements for digital media, exploring lighting design and techniques in the context of video production.

AMPT 426. Foley and Sound Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores adding sound created by actors and audio engineers to picture, focusing on the use of both traditional techniques and current digital audio workstation software.

AMPT 491. Topics in Advanced Media Production Technology. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of six credits. Explores a variety of media production issues that focus on the uses of specific software, technologies and processes. See the Schedule of Classes for details on the specific topics covered each semester.

AMPT 495. Sound Manipulation. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 401. Studio course that focuses on the live audio recording process, covering sound design, foley techniques, and use and maintenance of relevant sound equipment.

AMPT 496. Finishing the Story. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 402. Studio course that expands on the concepts previously covered in prerequisite course for students concentrating in video post-production, further exploring the technology of high-definition and digital cinema.

AMPT 497. Mastering Digital Cinema. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 403. Studio course that builds on concepts explored in prerequisite course for students in the production concentration, further exploring how traditional film and video production has been transformed by new technologies.

Applied Lessons (APPL)**APPL 200. Applied Lessons. 1 Hour.**

Semester course; half-hour weekly private lesson plus daily practice. 1 credit. May be repeated for a total of 8 credits. Previous experience and ability to read music required. Additional fee for course required. Private applied lessons for musical instruments. Consult the music department for appropriate section.

APPL 310. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. May be repeated for a total of 8 credits. For music majors only. Permission of chair required. Applied lessons for principal performing medium. Consult the music department for appropriate section.

APPL 311. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level I. Jury required. Consult adviser for appropriate course and section.

APPL 312. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 311 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level II. Jury required. Consult adviser for appropriate course and section.

APPL 313. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 312 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level III. Jury required. Consult adviser for appropriate course and section.

APPL 314. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 313 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level IV. Jury required. Consult adviser for appropriate course and section.

APPL 320. Applied Lessons Secondary Instrument. 1 Hour.

Semester course; half-hour weekly private lesson plus daily practice. 1 credit. May be repeated for a total of 4 credits. Open to music majors only. Private applied lessons for secondary instrument requirement. Consult music department for appropriate section.

APPL 321. Applied Lessons Secondary Instrument. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level I. Jury required. Consult adviser for appropriate course and section.

APPL 322. Applied Lessons Secondary Instrument. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 321 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level II. Jury required. Consult adviser for appropriate course and section.

APPL 323. Applied Lessons Secondary Instrument. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 322 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level III. Jury required. Consult adviser for appropriate course and section.

APPL 324. Applied Lessons Secondary Instrument. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 323 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level IV. Jury required. Must earn a minimum grade of C. Consult adviser for appropriate course and section.

APPL 330. Secondary Applied Instrument Lessons for Music Education. 1 Hour.

Semester course; 1 laboratory hour (half-hour weekly applied lesson plus daily practice). 1 credit. May be repeated for a total of 4 credits. Enrollment is restricted to music education concentration students. Applied lesson for secondary instrument requirement. Must receive permission from director of music education for specific instrument(s) of study. Consult music department Schedule of Classes for appropriate section.

APPL 415. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Enrollment is restricted to music majors. Prerequisite: APPL 314 with a minimum grade of C. Corequisite: APPM 299 or APPM 399. Applied lessons for principal performing medium proficiency Level V. Jury required. Consult adviser for appropriate course and section.

APPL 416. Applied Lessons and Junior Recital. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Enrollment is restricted to music majors. Prerequisite: APPL 415 with a minimum grade of C. Corequisite: APPM 299 or APPM 399. Applied lessons for principal performing medium proficiency Level VI. Recital required. Consult adviser for appropriate course and section.

APPL 417. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Enrollment is restricted to music majors. Prerequisite: APPL 416 with a minimum grade of C. Corequisite: APPM 299 or APPM 399. Applied lessons for principal performing medium proficiency Level VII. Jury required. Consult adviser for appropriate course and section.

APPL 418. Applied Lessons and Senior Recital. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Enrollment is restricted to music majors. Prerequisite: APPL 417 with a minimum grade of C. Corequisite: APPM 299 or APPM 399. Applied lessons for principal performing medium proficiency Level VIII. Recital required. Must earn a minimum grade of C. Consult adviser for appropriate course and section.

Applied Music (APPM)**APPM 126. Keyboard Fundamentals. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Reading, technical study, chording, playing by ear and improvisation in classical and non-classical styles. This course is for beginners.

APPM 161. Lyric Diction I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to VCU music majors and music minors. A study of stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet. Languages studied will include English and Italian.

APPM 162. Lyric Diction II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 161. Enrollment is restricted to VCU music majors and music minors. A study of stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet. Languages studied include French and German.

APPM 173. Keyboard Skills I. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

APPM 174. Keyboard Skills II. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 173. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

APPM 199. Recital/Convocation Attendance. 0 Hours.

Semester course; no credit. Course may be repeated without limit. Music majors only. Attendance at weekly departmental convocations and a minimum of 10 additional concerts or recitals each semester.

APPM 251. Jazz Improvisation I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 147. A study of basic compositional techniques that can be used in creating a musically effective improvised solo in the jazz medium.

APPM 252. Jazz Improvisation II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 251. Advanced melodic, harmonic and rhythmic improvisational techniques as applied to contemporary jazz compositions.

APPM 272. Jazz Piano for the Non-keyboard Player. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: APPM 174 and MHIS 147. Acquisition of jazz keyboard performance skills with emphasis on reading, harmonization and improvisation.

APPM 273. Keyboard Skills III. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 174. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

APPM 291. Topics in Applied Music. 1-3 Hours.

Semester course; 1-3 laboratory hours. 1-3 credits. May be repeated for a maximum of six credits. Enrollment requires permission of the instructor. Flexible semester courses in selected aspects of music performance. See the Schedule of Classes for specific topics to be offered.

APPM 299. Master Class. 0 Hours.

Semester course; no credit. Course may be repeated without limit. Participation in weekly master classes in student's applied major area.

APPM 309. Applied Composition. 1 Hour.

Semester course; one-hour weekly private lesson. 1 credit. May be repeated for a total of 4 credits. Prerequisite: MHIS 245. For music majors only. A structured approach to composing music from exercises and studies to complex large forms.

APPM 310. Applied Jazz Composition. 1 Hour.

Semester course; one-hour weekly private lesson. 1 credit. May be repeated for a total of 4 credits. Prerequisite: MHIS 245. For music majors only. A structured approach to composing music in the jazz idiom, including small and large ensemble formats.

APPM 350. Vocal Coaching. 1,2 Hour.

Semester course; one-half- or one-hour weekly private lessons plus daily practice. 1 or 2 credits. May be repeated for a total of 12 credits. Restricted to music majors. Corequisite: applied voice. Detailed exploration of historical musical style; diction skills for Italian, French, German, Spanish and English; audition techniques; and dramatic interpretation.

APPM 355. Orchestra. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Provides an opportunity to rehearse and perform works from the symphonic repertoire while improving ensemble skills.

APPM 356. Symphonic Wind Ensemble. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Ensemble performs a variety of contemporary wind ensemble repertoire as well as standards. Ensemble performs multiple times throughout the semester and at off-campus events. In addition to rehearsals, weekly one-hour sectionals are required.

APPM 357. University Band. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to all students who play wind or percussion instruments. The class does not require an audition for participation. Ensemble preparation intended for a single performance each semester.

APPM 358. Commonwealth Singers. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Rehearsals focus on the development of individual and group vocal technique, musicianship and communication relevant to repertoire prepared.

APPM 359. Choral Arts Society. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. A large, nonauditioned chorale open to all university students with choral experience. Ensemble will prepare and perform a variety of choral literature each semester.

APPM 360. Jazz Orchestra I. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of eight credits. Enrollment is restricted to music majors or by permission; audition required. Ensemble performs a range of contemporary and historical styles and performs multiple times throughout the semester. In addition to rehearsals, weekly one-hour sectionals are required.

APPM 361. Small Jazz Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Jazz ensembles of typically five to nine players rehearse and prepare existing repertoire and student compositions. Independent problem-solving and ensemble-playing skills developed through weekly rehearsals and coaching.

APPM 362. Accompanying: Piano. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 2 credits. For piano majors only. The development of skills in piano accompaniment of vocal and instrumental performance. Coaching and guidance will include harmonic voicing, sound coloring, balance issues, pedaling and score reduction.

APPM 363. Flute Choir. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission. Conducted ensemble rehearses and prepares repertoire.

APPM 364. Guitar Ensemble. 1 Hour.

Semester course; 2.5 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to guitar music majors or by permission; audition required. Biweekly rehearsals prepare this ensemble of 20-25 guitarists for performances of repertoire from the Renaissance to newly composed and arranged works.

APPM 365. Advanced Aural Skills I. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. Prerequisites: MHIS 245. Open to music majors only. Advanced development of skills in melodic and rhythmic dictation, harmonic identification and sight singing.

APPM 366. Aural Skills VI. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: MHIS 246. Open to music majors only. Advanced development of skills in melodic and rhythmic dictation, harmonic identification and sight singing.

APPM 367. Piano Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Small chamber ensemble in which piano shares leading or equal role rehearses and prepares repertoire. Groups will rehearse weekly and receive at least three or four coaching sessions per semester.

APPM 368. Woodwind Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Chamber ensembles of two to 13 players, involving woodwinds and often other instruments. Coached by various music faculty on a weekly basis.

APPM 369. Percussion Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Small ensembles of three to six players rehearse primarily non-conducted repertoire for semester performances. Weekly rehearsals with coaching from instructor designed to address musicianship, chamber ensemble skills, rehearsal technique and familiarity with contemporary performance practices.

APPM 371. String Chamber Music. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. String chamber involving two to five players rehearse and prepare repertoire. Independent problem-solving and ensemble-playing skills are developed through weekly rehearsals and coaching.

APPM 372. Brass Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Chamber ensembles of three to five players, involving various combinations of brass instruments. Coached by various music faculty on a weekly basis.

APPM 373. Advanced Keyboard Skills I. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For piano majors only. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation and reducing scores at the keyboard.

APPM 374. Advanced Keyboard Skills II. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisites: APPM 373 and MHIS 146. Enrollment restricted to piano majors. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation and reducing scores at the keyboard.

APPM 377. Vocal Chamber Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 3 credits. Open to music majors or by permission; audition required. Variable sized non-conducted ensembles receive weekly coaching in preparation for performances. Ensembles will seek to build proficiency in musicianship skills, reading ability, performance practices and interpretative technique in a variety of styles.

APPM 378. Vox Concordia. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Repeatable to fulfill degree requirements. Enrollment is restricted to music majors or by permission of the instructor; an audition is required. Ensemble rehearses and prepares repertoire for performance. Vox Concordia is open to university students who sing soprano, mezzo-soprano or alto and have previous choral experience.

APPM 381. Conducting. 2 Hours.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: MHIS 245. Development of fundamental gestural skills for conducting instrumental and choral ensembles including simple and compound meters, multimetric music and aleatoric music. Introduces basic score reading, aural analysis skills and terminology.

APPM 385. Opera Theatre. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. May be repeated for a total of 16 credits. Permission of instructor required. Explores aspects of opera through study, written research and fully staged public performances of operatic scenes and/or one-act operas.

APPM 386. Opera Ensemble. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 5 credits. Enrollment is restricted to music majors; selected by audition. Explores aspects of operatic chorus singing, acting craft, period and stage movement, stage makeup and technical theatre through fully staged performances.

APPM 395. Opera Orchestra. 1 Hour.

Semester course; 2.5 laboratory hours. 1 credit. May be repeated for a total of 5 credits. Corequisite: APPM 355. Enrollment is restricted to music majors. Through an intense series of rehearsals and performances of fully staged works from the operatic repertoire, students experience the art of accompanying singers, improve ensemble and listening skills, and develop their sense of balance and their understanding of operatic styles.

APPM 396. Jazz Orchestra II. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of eight credits. Enrollment is restricted to music majors or by permission; audition required. Ensemble performs a range of contemporary and historical styles and performs multiple times throughout the semester. In addition to rehearsals, weekly one-hour sectionals are required.

APPM 399. Jazz Master Class. 0 Hours.

Semester course; 1 laboratory hour. 0 credits. Prerequisites: APPL 314 and APPM 252. Weekly classes of mixed instrumentation prepare the student with the performance skills for entry into the jazz field. Instructor and peer critique, transcription and analysis, exposure to improvisatory issues.

APPM 463. Pedagogy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. A study of the musical, physiological and psychological aspects of teaching instruments or voice.

APPM 464. Piano Pedagogy Practicum. 2 Hours.

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisites: MHIS 304 and APPM 463 (piano). An advanced study of piano pedagogy with a supervised teaching component.

APPM 491. Topics in Applied Music. 1-3 Hours.

Semester course; 1-3 laboratory hours. 1-3 credits. May be repeated for a maximum of six credits. Enrollment requires permission of the instructor. Flexible semester courses in selected aspects of music performance. See the Schedule of Classes for specific topics to be offered.

APPM 492. Senior Project: Portfolio Review. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: APPL 416 for performance majors or APPL 314 for B.A. degree students. Enrollment restricted to students with senior standing and a minimum of 18 credits in 300- or 400-level courses. A capstone experience integrating resume preparation and professional development within the field of music. Documentation of creative activities and achievements accumulated during music studies is compiled for a portfolio review. Graded as Pass/Fail.

APPM 493. Music Internship. 1-4 Hours.

Semester course; Variable hours. 1-4 credits. May be repeated for a maximum of 4 credits. Prerequisites: open to music majors with junior standing, 3.0 GPA in major course work and minimum of 2.5 overall GPA, plus consent of coordinator and department chair. Provides full- or part-time professional field experience with approved organizations/ individuals. Areas for the internship include (but are not limited to) music publication and production, arts administration and promotion, arts management, entertainment law, presentations and research, instrument repair, recording techniques, composition and arranging, and/or performance opportunities. Graded as S/U.

Art Education (ARTE)**ARTE 222. Rethinking Popular, Visual and Media Culture. 3 Hours.**

Semester course; 3 lecture hours (delivered online). 3 credits. Learning to rethink the consumption and production of popular, visual and media texts. This course provokes investigations of cultural texts (visual art, digital media, performance and sites of popular culture) and their relationship to the sociocultural constructions of race, ethnicity, gender, sexuality, ability, class, etc., as well as the intersections of privilege and oppression in contemporary life.

ARTE 250. Computer Technology in Art Education. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. For art education majors only. The use of computer as a tool for creating electronic imagery, as a filtering mechanism for traditional media and to develop teaching materials for the pre-K through 12th-grade classroom. The course includes an introduction to presentation technology, digital imaging and Web page design. Ethical and copyright issues related to new technologies will be addressed.

ARTE 301. Art for Elementary Teachers. 3 Hours.

Continuous courses; 1 lecture, 1 seminar and 2 studio hours. 3-3 credits. Prerequisite: completion of ARTE 301 to enroll in ARTE 302. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

ARTE 302. Art for Elementary Teachers. 3 Hours.

Continuous courses; 1 lecture, 1 seminar and 2 studio hours. 3-3 credits. Prerequisite: completion of ARTE 301 to enroll in ARTE 302. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

ARTE 310. Foundations of Art Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. For art education majors only or by approval of the department chair. An examination of art education within the curricular structure of educational programs and the developmental growth of children. Students will explore the historical, philosophical and sociological foundations of art in education, including art education's development and current roles.

ARTE 311. Art Education Curriculum and Instructional Procedures. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTE 310. For art education majors only. A study of the principles of learning, instruction and curriculum in art education programs. Students will develop teaching competencies through micro-teaching experiences, analysis of instructional methods and writing units of study.

ARTE 380. Justice and Equity in the Visual Arts and Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Through lectures and discussion, students will engage with the history and current state of education and the arts. The course addresses intersectional approaches to studying the arts; contemporary and historical structures; and concepts that affect artists, art-making and education.

ARTE 401. Art Education Elementary Materials and Practicum. 4 Hours.

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: UNIV 200 or HONR 200, admission to the art teacher preparation program and completion of ARTE 311. For art education majors only or by the approval of the department chair. A preparatory experience with observation and participation in art programs in elementary grades prior to student teaching. This course explores art materials, techniques and teaching methods suitable for this level; and analyzes evaluation strategies appropriate for art.

ARTE 402. Art Education Secondary Materials and Practicum. 4 Hours.

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: admission to the art teacher preparation program and completion of ARTE 311. For art education majors only or by approval of department chair. A preparatory experience with observation and participation in art programs in middle school, secondary school and nontraditional settings prior to student teaching. This course explores art materials and techniques suitable for these levels, examines developmental performance levels and analyzes evaluation methods appropriate for art. Writing intensive.

ARTE 404. Clinical Internship Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Corequisites: TEDU 485 and 486. For art education majors only. Capstone experience. A seminar concurrent with clinical internship (student teaching) that gives students an opportunity to discuss and evaluate their progress in teaching assignments and other related activities.

ARTE 405. Methods and Field Experience in Art Education. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: ARTE 311. Corequisite: ARTE 406. Enrollment is restricted to art education majors who have been admitted to the art teacher preparation program or by approval of department chair. A preparatory experience with observation and participation in art programs in elementary school, middle school and/or secondary school settings prior to student teaching. This course explores teaching techniques suitable for these levels, examines developmental performance levels and analyzes evaluation methods appropriate for art. Writing intensive.

ARTE 406. Materials and Management in Art Education. 2 Hours.

Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: ARTE 311. Corequisite: ARTE 405. Enrollment is restricted to art education majors who have been admitted to the art teacher preparation program or by approval of department chair. This course is designed to assist educators in becoming effective managers of learning spaces and art materials. Emphasis on application of classroom/activity management, motivational and instructional theories, and the development and use of art materials for the K-12 classroom, museum and community settings. Models of classroom and activity management are explored with techniques to develop personal management plans. An emphasis will be placed on determining art materials and forms of student production predicated on learning modes and instructional styles to evaluate the effectiveness of the art lesson.

ARTE 407. Photography in Art Education. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. A general introduction to the technical, theoretical and historical issues related to photography. Taught as a seminar and workshop teaching both digital and traditional camera functions, photographic terms, concepts, history, technique and alternative processes applicable to K-12 education.

ARTE 408. Two-dimensional Art Experiences. 3 Hours.

Semester course; 1 seminar and 4 studio hours. 3 credits. Open to art education majors only. Students will explore the two-dimensional traditional and emerging media that are relevant to teaching. The focus will be contemporary methods and conceptual approaches to visual meaning-making.

ARTE 409. Three-dimensional Art Experiences. 3 Hours.

Semester course; 1 seminar and 4 studio hours. 3 credits. Open to art education majors only. Students will explore the three-dimensional traditional and emerging media that are relevant to teaching. The focus will be contemporary methods and conceptual approaches to visual meaning-making.

ARTE 450. Art for the Exceptional Student. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTE 311. For art education majors only. A study of the unique characteristics of exceptional students as related to involvement in the arts. The course examines disabled, aged, gifted, talented and other exceptional learners, and may include practicum and field experiences.

ARTE 491. Special Topics. 3 Hours.

Semester course; variable hours. Variable credit. May be repeated for a maximum of 9 credits with different content. A seminar and/or workshop offered on a variety of art education issues not included in the regular curriculum. See the Schedule of Classes for specific topics to be offered each semester.

ARTE 492. Independent Study. 1-6 Hours.

Semester course; variable hours. 1-6 credits per semester. May be repeated for a maximum total of 6 credits. Prerequisites: consent of department chair and instructor. Offered to art education majors only. This course will be limited to those few students who have demonstrated an exceptional level of ability and intense commitment to a particular area.

ARTE 493. Internship. 1-6 Hours.

Semester course; variable hours. 1-6 credits. May be repeated for a maximum total of 6 credits. Consent of department chair required. Offered to art education majors only. This service-learning course is designed to encourage students to seek internships with organizations that lead to research in art education and deepen engagement with diverse communities. Students must secure departmental approval for internships the semester prior to registration. International internships must register with the Education Abroad office.

ARTE 494. International Field Experience. 1-6 Hours.

Semester course; variable hours. 1-6 credits. Education Abroad application and consent of instructor required. Open to all students. This course is designed to facilitate student interactions with arts organizations in international settings that lead to research in art education and deepen engagement with diverse communities.

Art Foundation (ARTF)

ARTF 115. Art History Survey. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of ARTF 115 to enroll in ARTF 116. A survey of the history and development of the visual arts within the contexts of history, geography, politics, religion, economics and the broad social and personal aspects of human culture. Offered at VCU Qatar.

ARTF 116. Art History Survey. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of ARTF 115 to enroll in ARTF 116. A survey of the history and development of the visual arts within the contexts of history, geography, politics, religion, economics and the broad social and personal aspects of human culture. Offered at VCU Qatar.

ARTF 121. Introduction to Drawing. 2 Hours.

Continuous courses; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: completion of ARTF 121 to enroll in ARTF 122. Not for art majors. An introduction to the fundamentals of freehand drawing with an emphasis on representational drawing skills, perception and traditional drawing materials. Does not fulfill Art Foundation Program requirements.

ARTF 131. Drawing Studio. 3 Hours.

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. Drawing A to Z, from pencil to perspective, from sumi ink to skywriting. An intensive drawing studio covering the historic principles of drawing and their place in contemporary practice. Provides an in-depth investigation of line, perspective, the figure, gesture, space, atmosphere, erasure, etc. Through the repeated physical activity of drawing, students will refine their intellectual powers of observation and visualization.

ARTF 132. Surface Research. 3 Hours.

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. A studio-based course designed to cultivate a student's ability to create and understand two-dimensional imagery. Will include basic principles of design, color and visual organization in traditional, digital and lens-based media. Course content will explore the context of imagery in the larger culture and the potential of art and design.

ARTF 133. Space Research. 3 Hours.

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. A comprehensive investigation of three-dimensional phenomena in fine art and design. Will cultivate a student's ability to think, perceive, visualize, design and build in three dimensions. Issues of understanding and envisioning space, objects, scale and the relationship of the body to the built environment are subjects of the course. Students will acquire a broad skill set of fabrication techniques and an inquiry into the possibility of 21st-century materials.

ARTF 134. Time Studio. 3 Hours.

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. Brings together tenets of contemporary practice that have extended the fields of fine art and design. Time-based media such as film, video and sound are included in this mix. The historically underrepresented impulses of theatrically and performance will be explored. Students will use video as a primary tool, but will address larger issues of ephemerality, duration and the possibilities of the moving image.

ARTF 138. Project Seminar. 1-2 Hours.

Semester course; 1-2 seminar hours. 1-2 credits. May be repeated up to a maximum of four credits. Enrollment is restricted to first-year fine arts and design majors in the School of the Arts. A seminar on a selected issue, topic or skill in the fields of fine art and design.

ARTF 139. Project Studio. 1-2 Hours.

Semester course; 2-4 studio hours. 1-2 credits. May be repeated up to a maximum of four credits. Enrollment is restricted to first-year fine arts and design majors in the School of the Arts. A studio on a selected issue, topic or skill in the fields of fine art and design.

ARTF 150. Pre-Art Foundation Studio. 4 Hours.

Semester course; 6 studio and 2 lecture hours. 4 credits. For students in the Pre-Art Foundation Program in the School of the Arts. Offered to Pre-Art Foundation designees only. A beginning studio course emphasizing the fundamental issues of art and design, such as meaning, context, content and parameters, structure, materials, means of construction, form, space, and light. As the primary studio offering in the Pre-Art Foundation year, this course stresses the development of values that will become a basis for students' actions as professional artists and designers. Introduces students to the values, habits, traditions and expectations of studio culture. Addresses the processes and methods involved in the identification, development and realization of ideas and concepts. Does not fulfill Art Foundation Program requirements.

ARTF 160. Pre-Art Foundation Drawing. 4 Hours.

Semester course; 6 studio and 2 lecture hours. 4 credits. For students in the Pre-Art Foundation Program in the School of the Arts. Offered to Pre-Art Foundation designees only. A beginning drawing course offering intense exposure to the basic skills of figure and perspective drawing. Traditional drawing media, the fundamentals of anatomy and the fundamentals of linear perspective are covered. Does not fulfill Art Foundation Program requirements.

ARTF 191. Topics in Foundation Studies. 1-4 Hours.

Short course; variable hours. 5 weeks. 1-4 credits. May not be repeated. Prerequisites: permission of the program director and instructor. A seminar or studio on a selected issue, topic or skill in the field of foundation studies.

Art History (ARTH)

ARTH 103. Survey of Art I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introductory survey of art from the prehistoric era through the 13th century, including examples from selected regions of Europe, Asia, Africa and the Americas. Illustrated lectures demonstrate visual analysis and other art historical methods while also identifying key monuments and artists' work in relationship to historical contexts.

ARTH 104. Survey of Art II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introductory survey of art from the 14th century through 21st century, including examples from selected regions of Europe, Asia, Africa and the Americas. Illustrated lectures demonstrate visual analysis and other art historical methods while also identifying key monuments and artists' work in relationship to historical contexts.

ARTH 201. Banned! Art and Controversy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. What could make a work of art so controversial that it divides public opinion, is banned from public view or even gets destroyed? This course examines the reasons why visual art can be such a provocative and polarizing creative endeavor. By examining case studies from various historical and geographical contexts, students will explore the ways in which artistic controversy intersects key humanistic concerns, including questions of aesthetics and economic value; politics and cultural heritage; sacredness and religion; and gender and sexuality. This course will promote critical looking and thinking by introducing students to a variety of criteria used to evaluate art and by challenging them to consider diverse, often contradictory, interpretations of art.

ARTH 207. Global Art History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Art will be presented as an integral aspect of each culture from the areas of China, Japan, Africa, Oceania, Native America, and pre-Columbian Central and South America. Aesthetic appreciation will be enhanced through a presentation of various philosophies, customs and values. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

ARTH 245. Survey of Asian Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introductory survey of South Asian, Himalayan, Southeast Asian and East Asian art. Illustrated lectures provide a survey of Asian art and architecture.

ARTH 260. Islamic Art Survey. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTF 105 or ARTF 115; and ARTH 104, ARTF 106 or ARTF 116. Provides a survey of Islamic art and architecture from the seventh century to the present.

ARTH 261. Islamic Art Survey. 3 Hours.

Semester course; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 103 or ARTF 105 or 115 and ARTH 104 or ARTF 106 or 116. First semester: seventh century to 13th century. Second semester: 14th century to the present. Illustrated lectures provide a survey of Islamic art and architecture. Students will visit local museums and galleries to examine selected works of art.

ARTH 270. History of the Motion Picture I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The history of development of the motion picture from the early 1800s to the mid-20th century, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

ARTH 271. History of the Motion Picture II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The history of development of the motion picture from post-WWII to the present, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

ARTH 291. Special Topics. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 292. Writing for Art History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to art history majors. Students hone their writing skills in a variety of contexts relevant to the field of art history through writing assignments that emphasize argumentation, creativity and research, writing for a specific audience, responsible use of sources, paragraph and sentence mechanics, and developing an individual voice as an author.

ARTH 300. Prehistoric and Ancient Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the artistic expressions of the major prehistoric and ancient cultures of Europe, the Near East, Egypt and the Aegean.

ARTH 302. Introduction to Museums. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of contemporary theories, issues and practices in the museum environment. Topics include museum identity and function, administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education and public interaction.

ARTH 303. History of Art Museums. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course surveys the history of museums, from their origins in early modern Europe to the present day. This course explores the development of museums not just as preservers of culture, but also as active agents in shaping the perception of and access to cultural objects.

ARTH 304. Art of Ancient African Cultures and Kingdoms. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An in-depth examination of the visual arts of ancient African cultures and kingdoms from prehistoric times to the 18th century and analysis of the historical, cultural and economic forces that shaped them.

ARTH 305. Classical Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the development of Greek, Etruscan and Roman architecture, sculpture, painting and the minor arts from their beginnings to the early fourth century A.D.

ARTH 310. Medieval Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Survey of Western art and architecture between A.D. 300 and 1400.

ARTH 311. Early Islamic Art in a Global Context. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 260. Explores the early evolution of Islamic visual culture. Emphasizes artistic contact and exchange with non-Islamic civilizations in Europe, Asia and Africa up through the Crusader period.

ARTH 312. Islamic Art in a Global Context 1200 to 1600 CE. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 260. Explores the artistic dynamics of the Islamic world beginning with the Mongol expansion and the Spanish Reconquista through the flourishing of the Safavid, Mughal and Ottoman empires.

ARTH 315. Renaissance Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the Renaissance in Italy and Northern Europe. Painting, sculpture and architecture of the 14th, 15th and 16th centuries.

ARTH 320. Baroque and Rococo Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The art and architecture of Italy and northern Europe between 1600 and 1750.

ARTH 321. Islamic Art in a Global Context 1600 to 1800 CE. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 260. Explores Islamic and global artistic developments as facets of geopolitical shifts, cross-cultural interactions and changing aesthetic tastes.

ARTH 324. 18th-century Art in Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Study of European art between 1688-1789.

ARTH 325. 19th-century Art in Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Study of European art between 1770 and 1900.

ARTH 333. Modern Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Thematic survey of 19th- and 20th-century architecture. Provides a foundational introduction to the sequence of styles and design principles as well as key materials and techniques. Considers the relationship between form and function and the expression of cultural meaning through architecture.

ARTH 335. Pre-Columbian Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions of ancient America (i.e., Maya, Aztec and Inca). The course concentrates on Meso-America and the Andean Region.

ARTH 338. Colonial Art and Architecture of Latin America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions in Latin America from the 16th to the end of the 18th century.

ARTH 339. Modern and Contemporary Art and Architecture of Latin America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of 19th- and 20th-century art in Latin America focusing on the major movements and artists of Mexico, the Caribbean, Central and South America.

ARTH 342. African-American Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the art forms produced by Americans of African origin from the 17th century to the present with an emphasis on contemporary trends in black art. Crosslisted as: AFAM 342.

ARTH 344. American Art History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Survey of American art from early encounters between Native Americans and Europeans to discourses of multiculturalism in recent decades. Course explores themes of nationhood, race, gender, sexuality, class and ethnicity in art of the United States.

ARTH 347. Studies in Asian Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits. Explores the development of Asian artistic traditions in a particular geographic region or specified period. Topics may be an art form or medium, a geographical area, a theme, a function, or a context. May focus on artistic contact and cultural interconnection within a global context. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 348. Art of the African Diaspora. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course uses visual culture as means to explore the history and impact of the global spread of African peoples from slavery until the present day. Course examines a range of artistic practices from the visual culture of street festivals and Afro-Caribbean religions to the work of studio-trained artists of international repute.

ARTH 349. Body Adornment, Masks and Masking in Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An in-depth examination of the body in Africa with regard to its ontological, biological and cultural significance; its embellishment for aesthetic and other purposes; and its partial or total concealment (through masking) to mediate between the spiritual and physical world.

ARTH 351. Oceanic Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Study of the indigenous arts of Oceania from prehistoric times to the present.

ARTH 357. Women, Art and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?" Crosslisted as: GSWS 457.

ARTH 358. African Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art. Crosslisted as: AFAM 358.

ARTH 359. Studies in Aesthetics, Theory and Criticism of Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of nine credits. An in-depth examination of selected topics. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 361. The Human Condition: An Arts Perspective. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Considers both the commonality of the human condition and differentiation among sociological and cultural experiences represented in selected artworks in the permanent collection of the Virginia Museum of Fine Arts.

ARTH 365. Modern Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An in-depth examination of art, theory and criticism from 1900-50.

ARTH 366. Contemporary Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An in-depth examination of art, theory and criticism from 1950 to the present.

ARTH 367. German Expressionism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course examines "expressionism" as a generative concept that produced – and continues to produce – ways of organizing and understanding the words and pictures that circulated in the rapidly changing, socially and culturally turbulent Germany of the early 20th century.

ARTH 368. Pop Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course examines pop art from its beginnings in 1950s England through its heyday in 1960s New York and Los Angeles. Course explores the movement's wider effects in a variety of international contexts through analysis of early critical reception as well as contemporary theories of mass media, consumption and representation.

ARTH 369. Studies in Museum Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. An in-depth examination of selected topics. Topics include museum administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 370. History of Animated Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The history of animation as an art form, from early experimental to popular culture to independent animation. Design, structure and technique are considered.

ARTH 372. History of Photography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the history of photography from its invention in the early 19th century to the present. Provides a foundational introduction to processes and materials from analog to digital. Surveys principal artists and movements and examines the nature and cultural meanings of photographic representation through lecture and discussion.

ARTH 374. Studies in Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. An in-depth examination of selected topics in film. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 390. Art Historical Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 292 with minimum grade of C. Enrollment is restricted to art history majors. Course further develops critical thinking and writing skills specific to art history through several short written assignments and a final extended written project.

ARTH 391. Special Topics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 439. Studies in 20th-century Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 440. Modern and Contemporary Art and Architecture of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. A study of the impact on African art and architecture of Colonialism, urbanization and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists. Crosslisted as: AFAM 440.

ARTH 444. Studies in the Art of the United States. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 449. Studies in Asian Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 452. Studies in Pre-Columbian Art and Architecture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 454. Studies in African Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 465. Islamic Art in a Global Context 1800 to 1900 CE. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260 and ARTH 390. Examines the art and architecture of the Islamic world during the age of European colonialism.

ARTH 466. Modern and Contemporary Art in the Middle East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260 and ARTH 390. Focuses on art and architecture in the Middle East in the 20th and 21st centuries. Issues considered include the lives and work of selected artists, architects and designers; artistic media and themes; collecting; and the art market.

ARTH 489. Topics in Advanced Art History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of nine credits. Prerequisite: ARTH 300, ARTH 302, ARTH 303, ARTH 304, ARTH 305, ARTH 310, ARTH 315, ARTH 320, ARTH 324, ARTH 325, ARTH 333, ARTH 335, ARTH 338, ARTH 339, ARTH 342, ARTH 344, ARTH 347, ARTH 348, ARTH 349, ARTH 351, ARTH 357, ARTH 358, ARTH 359, ARTH 361, ARTH 365, ARTH 366, ARTH 367, ARTH 368, ARTH 369, ARTH 370, ARTH 372, ARTH 374, ARTH 390 or ARTH 391. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

ARTH 490. Senior Seminar in Art History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. A study of a specific topic, artist, movement or style in a seminar format. Students will produce an extended research project to fulfill the seminar requirements.

ARTH 493. Museum Internship. 3-6 Hours.

Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated with different topics for a maximum of 12 credits. Prerequisites: ARTH 302 and 390, both with a minimum grade of C. Restricted to art history majors only. Fieldwork in a local or regional museum. Topics include museum administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education.

ARTH 497. Directed Research Project. 3 Hours.

Semester course; 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. Advanced individual work on a subject to be formulated in writing by the student and the instructor.

Arts (ARTS)**ARTS 250. Working Your Arts Degree. 1 Hour.**

Semester course; 1 seminar hour (delivered online). 1 credit. Enrollment is restricted to students in the School of the Arts. This is a decision-making course for individuals focusing on the process of education and career and professional planning. Through exploration of various educational, career and professional options students will identify paths suitable to their strengths and interests and emerge from the course with a plan for their continuing education, their profession or both.

ARTS 291. Special Topics. 0.5-4 Hours.

Semester course; variable hours. .5-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

ARTS 370. Topics in Art. 3 Hours.

Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the Schedule of Classes for specific topics to be offered each semester.

ARTS 371. Topics in Art. 3 Hours.

Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the Schedule of Classes for specific topics to be offered each semester.

ARTS 391. Special Topics. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

ARTS 392. Independent Study. 1-6 Hours.

Semester course; variable hours. 1-6 credits. May be repeated for a maximum of 9 credits. Offered to School of the Arts majors only. This course is for students pursuing advanced scholarly or studio projects not addressed by the existing curriculum.

ARTS 430. Guided Study Afield. 1-9 Hours.

1-9 credits. Prerequisite: permission of instructor required. Designed to enhance the student's knowledge by providing first-hand experience with the most significant contribution of aesthetic import within the geographic areas traveled.

ARTS 460. Synesthesia: Exploring Process Across Disciplines. 2 Hours.

Semester course; 4 studio hours. 2 credits. Enrollment is restricted to students in the School of the Arts and English majors or with permission of the instructor. Intended for those with an active creative practice in visual, performing or literary arts, this course will investigate and reveal commonalities in the creative process for choreographers, visual artists and writers. Ideas to be explored include the ways in which creative work embodies its own essence and meaning as well as the ways in which that essence and meaning are experienced by creators and viewers. Students will be exposed to a wide range of thinking on the creative process through readings, films and lectures. Students will engage in cognitive and embodied exercises across disciplines and complete creative assignments that bridge disciplines. Students will workshop their creative endeavors together. Graded as pass/fail.

ARTS 491. Special Topics. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

ARTS 492. Independent Study. 1-6 Hours.

Semester course; variable hours. 1-6 credits. May be repeated for a maximum of 9 credits. Offered to School of the Arts majors only. This course is for students pursuing advanced scholarly or studio projects not addressed by the existing curriculum.

ARTS 493. Internship. 1-6 Hours.

Semester course; variable hours. 1-6 credits. (30-40 work hours per credit.) May be repeated for a maximum of 9 credits. Prerequisites: junior standing in the School of the Arts and permission of department chair. A practicum that provides students with valuable hands-on experience. Internship details are to be worked out and agreed upon by supervising professor, department chair and internship employer. A grade of PR will be assigned for an internship that extends past the grading period.

Cinema (CINE)**CINE 100. Visual Storytelling I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Enrollment is restricted to B.A. in Cinema majors. This course will build a foundation of skills in the use of camera, lighting and sound for narrative film production. Pre-production planning concepts and methods will also be presented.

CINE 101. Visual Storytelling II. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Enrollment is restricted to B.A. in Cinema majors. This course will build a foundation of skills in the use of camera, lighting and sound for narrative film production. The primary focus will be on production and post-production equipment and processes.

CINE 110. Writing for Cinema I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to cinema majors. This course will examine the creative process and elements of effective narrative writing. Students will explore various formats such as narrative pieces, critical essays and basic screenplays.

CINE 111. Writing for Cinema II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CINE 110. Enrollment is restricted to cinema majors. This course will focus on the development of synopsis, treatments and intermediate screenplays. Strategies for pitching and communicating narrative ideas will be addressed.

CINE 120. Integrating Sight and Sound. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students in the cinema program or a music program, including the music minor. This course introduces students to digital audio workstation software and its applications to produce, edit, mix and synchronize soundtracks to motion pictures. Students will receive instruction and practical experience applied to music editing, sound design, Foley and purposeful integration of sound into time-based media projects in a DAW environment.

CINE 200. Cinema Form and Concept I. 2 Hours.

Semester course; 2 lecture and 2 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking.

CINE 201. Cinema Form and Concept II. 2 Hours.

Semester course; 2 lecture and 2 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative screenwriting and filmmaking.

CINE 210. Synergetic Film Production. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CINE 101. Enrollment is restricted to cinema majors. This course will provide a foundation for professional communication skills, managing and leading teams, and working effectively in a positive, collaborative environment.

CINE 217. Mechanics of Screenwriting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have permission of the instructor. Introductory course focused on building an in-depth and logistical understanding of how a screenplay informs and prescribes the movie-making process. The course will cover common story structures, standard script formatting and abbreviations, script analysis for production, and creating shot-by-shot shooting lists.

CINE 300. Cinema Form and Concept III. 2 Hours.

Semester course; 2 lecture and 1 studio hours. 2 credits. Prerequisite: UNIV 200 or HONR 200. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking including screenplay treatments and storyboards.

CINE 301. Cinema Form and Concept IV. 2 Hours.

Semester course; 2 lecture and 1 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking including the roles of dialogue and light.

CINE 390. Digital Cinema Production Intensive I. 12 Hours.

Semester course; 1 lecture and 28 studio hours. 12 credits. Prerequisites: CINE 100 and CINE 101, or permission of instructor. Enrollment is restricted to B.A. in Cinema majors or by permission of instructor. Production and postproduction of narrative short films using digital technology for camera, editing and sound, with an emphasis on the technical and tactical aspects of production. This course is designed for full-day participation over a six-week summer session.

CINE 392. Independent Study in Film. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior standing as a major in cinema and approval of department chair and instructor. Individual instruction and supervision of a special project.

CINE 401. Advanced Cinema Production. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: CINE 390 or permission of instructor. Open to junior and senior B.A. in Cinema majors. Lecture and workshop in the production, theory, business and historical context of film.

CINE 490. Digital Cinema Production Intensive II. 15 Hours.

Semester course; 1 lecture and 28 studio hours (additional evening and weekend hours for location filming and postproduction). 15 credits. Prerequisites: CINE 200, CINE 201 and CINE 390, or permission of instructor. Enrollment is restricted to B.A. in Cinema majors or by permission of instructor. Advanced production and postproduction of narrative short films using digital technology for camera, editing and sound, with the development of budgets, production schedules and rehearsals with performers.

CINE 491. Special Topics in Cinema. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An in-depth examination of selected topics. See the Schedule of Classes for specific topics to be offered each semester.

CINE 493. Film Internship. 1-3 Hours.

Semester course; 1-3 practicum hours. 1-3 credits. May be repeated up to a maximum of six credits. Enrollment is restricted to B.A. in Cinema majors. Supervised work experience related to cinema.

CINE 495. Cinema as Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. A critical exploration of cinema as art, image, narrative and theory. Film lists, theoretical/critical texts, focal points of emphasis, and themes vary, including studies of individual or linked sets of filmmakers or film movements, seen through the lens of classic and/or contemporary film theory and criticism. See the Schedule of Classes for specific topics to be offered.

CINE 496. Advanced Screenwriting Seminar. 3 Hours.

Semester course; 3 seminar hours. 3 credits. A study of the narrative screenwriting process. In a workshop setting, students advance their use and understanding of the formal elements of narrative such as character, story, plot, arc, conflict, unity, development and theme.

CINE 497. Expanded Cinema: _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Students advance their critical knowledge of contemporary screen culture and expand their understanding of formats, techniques and styles in narrative cinema, television and/or streaming.

Communication Arts (COAR)

COAR 200. Visual Studies: Drawing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 131. A course in drawing from direct observation of specific references: visual analysis, surface light and color, structure, and context. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 201. Drawing Studies: The Figure Observed. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 131. Enrollment is restricted to communication arts majors. Students will study and explore how to draw from direct observation using the figure as the primary means to understand proportion, volume and spatial relationships. Class will include skeletal structure, basic anatomy and physical aspects of the figure. Various drawing and painting media will be explored. Specific assignments will be informed by the reference and use of the figure in the history of art and contemporary developments.

COAR 202. Drawing Studies: The Figure in Context. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 131. Enrollment restricted to communication arts students. Drawing from direct observation using the figure as the primary means to understand proportion, volume and spatial relationships. Specific problems will include the figure as a dynamic element in different lighting, spatial and conceptual contexts. Various drawing and painting media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 203. Digital 3D Studio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Enrollment is restricted to majors and minors in the Department of Communication Arts. The course focuses on the use of 3D software as a powerful drawing tool and current methodologies. Modeling, surfacing, lighting, rendering and applicability to industry and personal expression will be addressed.

COAR 210. Visual Studies: Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: ARTF 132 and 133. A course in which an understanding of the relationship between form and communication is developed. The student will develop an awareness and appreciation for visual imagery as a tool for the transmission of information and ideas.

COAR 211. Fundamentals of Typography. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 132. An introduction to the study of typography as used in communication arts. Course will include the study of hand-drawn and digital letterforms and their context. Students will be introduced to professional digital methods (e.g., Illustrator).

COAR 300. Illustration: Drawing and Painting. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. Explores and addresses formal, conceptual and technical considerations and issues involved in the use of drawing and painting. Various drawing and painting media will be explored.

COAR 301. Drawing Studies: The Figure (Intermediate). 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 6 credits. Prerequisite: COAR 201. Drawing from direct observation at the intermediate level using the figure as the primary means to understand proportion, volume and spatial relationships. Various drawing and painting media will be explored.

COAR 302. Print Media. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. An intermediate course in the use of printing processes and techniques to develop communicative imagery. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 303. Color Theory and Practice. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 300. An intermediate course in the application of color theory to specific illustrative problems. A number of color theories, both historical and contemporary, will be studied and applied.

COAR 304. Illustration Media and Techniques. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 200 and 202. Explores various mixed-media techniques, including both two- and three-dimensional approaches to illustrative problems.

COAR 305. Figure in Illustration. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. An introduction to the visual representation of the human form as it applies to illustration.

COAR 307. The Face. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 201 and COAR 202. Employing a variety of drawing media, students will explore the nuances of the human face as a subject. This course focuses on both process and the realization of final projects.

COAR 308. Cut Scene. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course focusing on research and experimentation in specialized visual communication media utilizing consumer electronics.

COAR 311. Type and Image. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 211. An advanced course that explores graphic design with an introduction to digital methods as a means to express and communicate ideas. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 320. Concept Drawing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. Explores the use of drawing as a tool to communicate concepts. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 321. Sequential Imaging. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: junior standing in communication arts. Sequential imagery as applied to books, graphic novel and film storyboarding. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 325. Botanical Drawing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 300. This course explores plant life from direct observation and analytical drawing. Students examine the major divisions and structures of plants and how to depict their unique form.

COAR 326. Imagery for Science Fiction and Fantasy. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and 320. This course focuses on assignments for science fiction/fantasy subject matter and its various commercial applications.

COAR 327. Comics and Graphic Novels I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 201 and COAR 202. This course develops skills essential for visual storytelling through comics and graphic novels.

COAR 328. Comics and Graphic Novels II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 327. This course further develops skills essential to expanding understanding of visual storytelling through comics and graphic novels.

COAR 332. Digital Drawing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 201 and COAR 202. An intermediate course exploring the use of computer and peripheral devices in the creation of personal work. Students will be introduced to relevant conceptual themes and professional methods and practices.

COAR 341. Scientific Illustration. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. An introductory course in the development of accurate representational imagery for recording scientific observations and ideas.

COAR 352. History of Visual Communications I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. An examination of the historical developments in visual communications from cave paintings to modernism.

COAR 353. History of Visual Communications II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. An examination of the historical developments in visual communications from modernism to the contemporary era.

COAR 391. Communication Arts Topics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of 12 credits. Topical lectures in design issues and visual communications.

COAR 392. Research/Individual Study. 1-6 Hours.

Semester course; 1-2 lecture and 3-6 studio hours. 1-6 credits. May be repeated for a total of 6 credits. Enrollment requires permission of instructor, approval of faculty adviser and chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem seeker and solver with the ability to carry out self-stated goals.

COAR 401. Drawing Studies: The Figure (Advanced). 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 12 credits. Prerequisite: COAR 301 or permission of instructor. Drawing from direct observation at an advanced level using the figure as the primary means to understand proportion, volume and spatial relationships. Various drawing and painting media will be explored.

COAR 407. Senior Project. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and COAR 320. Enrollment restricted to students with senior status in communication arts. Focuses on the assessment and advancement of studio techniques, methods and practices. Students document and share their decision-making processes in the generation of creative projects.

COAR 420. Graphic Essay. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and COAR 320. An advanced course that explores the relationship between text and image, and their potential as tools to enable us to create and communicate effectively. Assignments will incorporate applicable references to the history of art and literature.

COAR 421. Imagery for Children. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 300. An advanced course developing both fiction and nonfiction illustrations intended for the preschool and elementary school children's publishing market.

COAR 422. Editorial Illustration II. 4 Hours.

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: COAR 300 and 320. An advanced course developing the student's skill at interpreting an author's manuscript. The major emphasis is given to illustrations appearing in books and magazines.

COAR 432. 3D Image and Movement. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 203. Enrollment is restricted to majors in the School of the Arts. Course addresses current technological tools to explore the relationship between image, object and movement.

COAR 433. Game Design, Theory and Practice. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 203 and COAR 321. Students will study the history, theory and design of games, gaming concepts and narrative from past to present.

COAR 435. 3D Modeling for Concept Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 203 and COAR 320. A focus on the use of high polygraph 3D graphics software as tools to create highly detailed computer models for concept design, movies, broadcast media and games.

COAR 436. Visual Effects I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CINE 217 and COAR 432. Synthesizes prerequisites in 3D modeling, rigging and rendering with an introduction to fundamental skills used in the creation of visual effects. Students will learn basic compositing and the integration of computer graphics and 3D components with live-action plates.

COAR 437. Visual Effects II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 436. Continues the instruction and practice of visual effects with advanced techniques for 3D animation and VFX development, including 3D pre-vis, match-moving, dynamics, multi-pass rendering and node-based compositing. Students will explore advanced rendering and compositing techniques for 3D computer graphics.

COAR 441. Scientific Illustration II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 341. An advanced course in the development and creation of accurate documentation and representation of scientific information and imagery including plant taxonomy, insect morphology, and physiological and pathological processes.

COAR 450. Business of Communication Arts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. The study of business management with an emphasis on ethics and the standards of fair practice including financial and contractual guidelines.

COAR 462. Projects in Illustration. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: senior standing in communications arts and permission of the instructor. An advanced-level course in conceptualization, execution, realization and documentation as realized through a series of projects in illustration. Students will be required to create, acquire and structure projects that will test their conceptual and technical abilities. Project work will be exhibited, documented or printed. Various drawing, painting and mixed media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

COAR 463. Communication Arts Honors Studio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 12 credits. Prerequisites: junior standing in communication arts, 3.0 GPA and permission of the CA faculty. An advanced course for selected students. Expectations include to work on individual and group projects at a professional level.

COAR 464. Senior Portfolio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and COAR 320. Enrollment restricted to students with senior status in communication arts. Focuses on the curation and evolution of a portfolio that aligns with the student's professional goals. Integrates effective oral, written and visual communication, critical-thinking and advanced studio and professional practices.

COAR 491. Studio Topics in Communication Arts. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for credit. Topical studio focusing on research and experimentation in specialized visual communication media.

COAR 492. Communication Arts Internship. 1-6 Hours.

Semester course; 1-6 credits. May be repeated for a maximum of 12 credits. Prerequisites: senior standing, 3.0 GPA or permission of the chair. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

Craft and Material Studies (CRAF)**CRAF 211. Jewelry. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Investigation of basic jewelry making processes such as construction, chasing, surface embellishment and basic stone setting. Research in contemporary and historical jewelry forms.

CRAF 221. Woodworking Techniques. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to techniques of woodworking. Includes the use of hand tools; hand and machine joinery; shaping and carving; finishing; and techniques involving jigs and fixtures. Students participate in studio work.

CRAF 240. Introduction to Ceramics. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to beginning processes of wheel throwing and hand-built construction techniques, design, aesthetics and the creative development of clay objects examining cultural, historical and personal modes of expression. Demonstrations and slide presentations are given for assignments along with handouts to assist in illustrating techniques and processes. Students will be introduced to various ceramic aesthetics in contemporary, social and historical context.

CRAF 250. Introduction to Glass Fabrication. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction and investigation into the physical and associative material properties of glass. Students will explore a variety of methodologies for hot, cold and casting glass fabrication. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 260. Introduction to Textiles. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction to basic textile techniques, tools and materials. This course introduces dyeing, weaving, felt-making, embroidery, sewing and related techniques. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 282. Sophomore Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to the fields within the Department of Craft and Material Studies, critique practices, planning for arts career and writing within the field.

CRAF 291. Introductory Topics in Craft/Material Studies. 1-3 Hours.

Semester course; 2-6 studio hours. 1-3 credits. May be repeated for a maximum of nine credits. A studio focusing on a selected issue or topic related to the field of craft. See the Schedule of Classes for specific topics to be offered each semester.

CRAF 295. Engaging With Art. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200. Enrollment is restricted to students enrolled outside of the School of the Arts. This course will introduce non-art majors to contemporary craft and art-making processes and strategies to gain a deeper understanding of the value of art within current social and cultural contexts. Students will participate in discussions and execute a variety of projects that strengthen their understanding of how to interpret works of art, utilize art terminology and engage with their art community.

CRAF 301. Advanced Metal Fabrication: Forming. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various metal forming techniques. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 302. Advanced Metal Fabrication: Mechanisms. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various fabrication techniques, findings and mechanisms related to the production of jewelry and small-scale objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 303. Advanced Metal Fabrication: Surface Techniques. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various surface treatments employed in the production of jewelry and metal objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 304. Advanced Metal Fabrication: Casting and Stone Setting. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to casting and stone setting techniques employed in the production of jewelry and metal objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

CRAF 320. Furniture Design. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: CRAF 221 with a minimum grade of C. The course explores the development of ideas through drawings, mock-ups and the planning and execution of a small furniture object utilizing basic and specialized woodworking techniques.

CRAF 321. Advanced Woodworking and Furniture Design. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

CRAF 322. Advanced Woodworking and Furniture Design. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

CRAF 341. Advanced Ceramics. 4,6 Hours.
Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

CRAF 342. Advanced Ceramics. 4,6 Hours.
Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

CRAF 344. Ceramics: Mold-Making. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 240 with a minimum grade of C. This course is a continuation of study in ceramics with a focus on prototyping and mold-making techniques. While focused on generating original artwork, the course will cover prototype development and serialized production using a variety of mold-forming processes. The history and contemporary application of ceramic mold-making techniques will be covered through student research, demonstrations and studio work.

CRAF 346. Tableware. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 240 with a minimum grade of C. May be repeated for a maximum of 12 credits. This course is designed to expand student understanding of how pottery operates, both as utilitarian object and object of material culture. Students will develop technical understanding and innovation within utilitarian aspects of pottery. Assignments and research will challenge students to consider the role of utilitarian pottery in contemporary culture.

CRAF 351. Intermediate Glass Fabrication/Hot. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. A deeper and broader delving into hot and cold glass fabrication techniques, with an introduction to the utilization and application of color processes will be explored.

CRAF 352. Intermediate Glass Fabrication/Kiln Forming. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. A deeper exploration of warm glass (kiln forming) processes that will involve advanced mold-making techniques.

CRAF 353. Glassworking: Lampworking. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. Provides an opportunity for further investigation, specialization and technical mastery in glass lampworking design.

CRAF 354. Intermediate Glass Fabrication. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. A deeper and broader delving into hot and cold glass fabrication techniques, with an introduction to the utilization and application a multigenerational approach to image realization will be extensively investigated.

CRAF 361. Intermediate Textiles: Tapestry/Weaving. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. An introduction to the floor loom with an emphasis on tapestry weaving. Concentrated studio work in contemporary and traditional loom techniques along with continuing individual investigation of other textile techniques.

CRAF 362. Intermediate Textiles: Pattern Weaving. 4 Hours.
Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. An introduction to the floor loom with an emphasis on pattern weaving. Concentrated studio work in contemporary and traditional loom techniques along with continuing individual investigation of other textile techniques.

CRAF 363. Fabric Design I. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. Exploration of dye and pigment techniques for fabric along with pattern development and conceptual use of fabric.

CRAF 364. Fabric Design II. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. Exploration of dye and pigment techniques for fabric along with pattern development and conceptual use of fabric.

CRAF 367. Tapestry. 4 Hours.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: permission of instructor. Origins of tapestry forms and execution of techniques.

CRAF 368. Tapestry. 4 Hours.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: permission of instructor. Origins of tapestry forms and execution of techniques.

CRAF 382. Junior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRAF 282 and UNIV 200 or HONR 200. Continued investigation of the craft field, critique practices, planning for careers through the lens of creativity and exploration, and a continuation of writing in the field.

CRAF 391. Topics in Craft/Material Studies. 1-3 Hours.

Semester course; 2-6 studio hours. 1-3 credits. May be repeated for a maximum of nine credits. A studio focusing on a selected issue or topic related to the field of craft. See the Schedule of Classes for specific topics to be offered each semester.

CRAF 446. Glaze Technology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Development, formulation and application of ceramic glazes. The technology includes high, medium and low firing ranges as well as color and analysis of glaze materials.

CRAF 447. Ceramic Technology: Clay, Claybodies and Slips. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 240 with a minimum grade of C. In-depth study of ceramic materials and their application in claybody and glaze formulation. Beginning with geology and mineralogy, students will gain an understanding of how ceramic materials are formed and how they work together in clay and glaze recipes. Students will learn methods for testing and altering existing glaze recipes as well as formulating their own using the unity molecular formula. Focused on high-fire materials, students will also learn to fire both electric and gas kilns in oxidation and reduction atmospheres.

CRAF 455. Glass Through Time. 3 Hours.

Semester course; 2 lecture and 1 studio hours. 3 credits. Prerequisite: permission of instructor. This class will be an in-depth examination of the application and utilization of the material glass throughout time. An inquiry into present and future artistic and architectural applications of the material will be explored.

CRAF 480. Senior Studio/Critique Course. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisites: CRAF 382; and CRAF 301, 302, 303, 304, 320, 321, 322, 341, 342, 343, 344, 351, 352, 353, 354, 361, 362, 363, 364 or 369, both with a minimum grade of C. Corequisite: CRAF 301, 302, 303, 304, 320, 321, 322, 341, 342, 343, 344, 351, 352, 353, 354, 361, 362, 363, 364 or 369. Focuses on the development of independent interests aimed at creating a cohesive series/body of work.

CRAF 481. Senior Studio/Critique Course. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 480 with a minimum grade of C. The course will focus on the continuation of creating a cohesive series/body of work begun during CRAF 480.

CRAF 482. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: senior standing in the major and CRAF 382. Capstone course focusing on the continued investigation of the craft field with emphasis on the student's media area(s) of focus and professional practices.

CRAF 491. Topics in Craft/Material Studies. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for a maximum of 9 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of crafts. See the Schedule of Classes for specific topics to be offered each semester.

CRAF 492. Independent Study. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for a maximum of 6 credits. Prerequisites: senior standing in the major and permission of the instructor. The student will pursue advanced, individually directed study on a subject to be formulated in writing by the student and instructor.

CRAF 493. Fieldwork. 3 Hours.

Semester courses; 135 clock hours. 3 credits. Prerequisites: senior standing in the major and permission of department chair. Opportunity for practical work experiences. Senior students are placed with professionals who offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 135 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

CRAF 494. Fieldwork. 6 Hours.

Semester course; 270 clock hours. 6 credits. Prerequisites: senior standing in the major and permission of department chair. Opportunity for practical work experiences. Senior students are placed with professionals who offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 270 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

Creative Practices (CREA)**CREA 201. The Creative Economy. 3 Hours.**

Semester course; 3 lecture hours (offered online). 3 credits. Examines the contribution of creative ideas to the world economy with a focus on where, how and why creative ideas are produced and consumed.

CREA 202. Creative Coding. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the intersections of creative thinking and computational thinking. Students develop creative ideas with front-end and back-end digital languages, processes and tools.

CREA 300. Idea Accelerator. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Exposes students to the processes and methodologies used to transform ideas and opportunities into sustainable business models. Students evaluate business case studies, engage industry professionals and investigate the commercial potential of their creative ideas.

CREA 330. Interdisciplinary Web Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces web design tools, methods and processes. Topics include customer expectations, web coding, multimedia technologies, usability and accessibility practices, and techniques for the evaluation of web design.

CREA 350. Piloting the Enterprise. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces the language of the creative enterprise, focusing on personal branding, business operation and strategic professional development.

CREA 391. Topics in Creative Practices. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Explores a variety of topics related to the creative practices in arts, society and different sectors of industries, including human factors, user experience and user interface development.

CREA 393. Design Ops Internship. 1-6 Hours.

Semester course; 1-6 practicum hours. 1-6 credits (40 work hours per credit). May be repeated for a maximum of 12 credits. A practicum that provides students with experience in hands-on research and innovative problem-solving. Emphasis is on the collaborative development and commercial application of products that focus on emerging technologies. Internship details are determined by supervising professor(s) and project adviser(s). Graded as pass/fail.

CREA 450. Creative Disruption. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a total of six credits. Students develop their own creative ventures, including a product/service business model, legal considerations, financial and marketing plans and media presence (web, mobile, social). Students work with a network of mentors from the university and industry.

Dance and Choreography (DANC)**DANC 101. Modern Dance Technique I and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum total of 12 credits on the recommendation of the chair. Prerequisites: completion of DANC 101 to enroll in DANC 102. Dance major or departmental approval. Fundamental study and training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength and kinesthetic awareness. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 102. Modern Dance Technique I and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum total of 12 credits on the recommendation of the chair. Prerequisites: completion of DANC 101 to enroll in DANC 102. Dance major or departmental approval. Fundamental study and training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength and kinesthetic awareness. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 103. Survey of Dance History. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: completion of DANC 103 to enroll in DANC 104. Dance major or departmental approval. First semester: dance from ritual to the contemporary ballet and the foundations of the Western aesthetic as it relates to dance, and the development of the ballet. Second semester: Western concert dance from the aesthetic dance of the late 1800s to contemporary modern dance. These courses are the first two of a three-course sequence that fulfills one of the general education writing intensive requirements for dance majors.

DANC 104. Survey of Dance History. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: completion of DANC 103 to enroll in DANC 104. Dance major or departmental approval. First semester: dance from ritual to the contemporary ballet and the foundations of the Western aesthetic as it relates to dance, and the development of the ballet. Second semester: Western concert dance from the aesthetic dance of the late 1800s to contemporary modern dance. These courses are the first two of a three-course sequence that fulfills one of the general education writing intensive requirements for dance majors.

DANC 105. Improvisation. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: completion of DANC 105 to enroll in DANC 106. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention and movement creativity.

DANC 106. Improvisation. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: completion of DANC 105 to enroll in DANC 106. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention and movement creativity.

DANC 107. Music and Dance Forms. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 101 and 105, or permission of instructor. An exploration of the various traditional and nontraditional concepts of music that are used in collaboration with dance. Course includes lecture, reading, listening and movement assignments. Focus will be on the dancer's understanding and use of music through movement analysis and improvisation.

DANC 111. Ballet Technique I. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisites: completion of DANC 111 to enroll in DANC 112. Corequisites: DANZ 111-112. Dance major or departmental approval. These courses may be repeated for a maximum total of 8 credits on the recommendation of the chair. Fundamental study of the principles of ballet technique.

DANC 112. Ballet Technique I. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisites: completion of DANC 111 to enroll in DANC 112. Corequisites: DANZ 111-112. Dance major or departmental approval. These courses may be repeated for a maximum total of 8 credits on the recommendation of the chair. Fundamental study of the principles of ballet technique.

DANC 121. Tap Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: AFAM 121.

DANC 122. Tap Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: AFAM 122.

DANC 126. African-Caribbean Dance I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: AFAM 126.

DANC 127. African-Caribbean Dance I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: AFAM 127.

DANC 133. Introduction to Ballet Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. This course may be repeated for a maximum total of 4 credits on the recommendation of the chair. For nonmajors. Introductory study of the principles of ballet technique.

DANC 134. Introduction to Ballet Technique II. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 133 or permission of instructor. For nonmajors. This course may be repeated for a maximum total of 4 credits on the recommendation of the chair. Further introductory study of the principles of ballet technique.

DANC 141. Ballroom Dancing. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. A study of basic ballroom dance steps and practice in their performance.

DANC 142. Ballroom Dancing. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. A study of basic ballroom dance steps and practice in their performance.

DANC 151. Jazz Dance Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: AFAM 151.

DANC 152. Jazz Dance Technique I. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: AFAM 152.

DANC 161. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a dance concert.

DANC 162. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a dance concert.

DANC 171. T'ai Chi. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi, a Chinese exercise form, which is designed to bring one to full potential through balancing, aligning and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

DANC 172. T'ai Chi. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi, a Chinese exercise form, which is designed to bring one to full potential through balancing, aligning and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

DANC 183. Introduction to Modern Dance Technique. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum of 4 credits. For non-dance majors. Experiential introduction to basic movement principles, body alignment and the elements of modern dance.

DANC 184. Introduction to Modern Dance Technique. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 183 or by audition on first day of class. May be repeated for a maximum of 4 credits. For non-dance majors. Experiential introduction to basic movement principles, body alignment and the elements of modern dance.

DANC 191. West African Dance Techniques. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for up to 4 credits. This course is designed to provide the student with movement skill(s) and knowledge of traditional dances of West Africa, with an emphasis on the acquisition of basic movement sequences, as well as traditional dance techniques aligned with the songs, instruments, rhythms and foundational understanding of the cultural and historical context in which the dance derived. This course is open to students of all skill levels, from beginner to the more advanced.

DANC 201. Modern Dance Technique II and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 102, or departmental approval; completion of DANC 201 to enroll in DANC 202. Further study and training in the principles of modern dance technique on an intermediate level with the expectation of better coordination of all elements into a sense of dance. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 202. Modern Dance Technique II and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 102, or departmental approval; completion of DANC 201 to enroll in DANC 202. Further study and training in the principles of modern dance technique on an intermediate level with the expectation of better coordination of all elements into a sense of dance. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 204. Introduction to Composition. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 183 or DANC 184. Applied study of the introduction and principles of dance composition and the dance-making process. This course emphasizes the creation and performance of solo, duet and/or trio dances. This course will incorporate group improvisations, creating and performing dance studies, discussion, critical analysis, and journal writing. Dance experience is required.

DANC 205. Composition. 3 Hours.

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 107, or departmental approval; completion of DANC 205 to enroll in DANC 206. An introduction to the basic elements of choreography.

DANC 206. Composition. 3 Hours.

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits.
Prerequisites: dance major and DANC 105 and 107, or departmental approval; completion of DANC 205 to enroll in DANC 206. An introduction to the basic elements of choreography.

DANC 207. Studies in Music for Dance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: dance major and DANC 107, or departmental approval. Study of the history, theory and aesthetics of music as it relates to dance. Course includes lecture, listening, reading, discussion, writing and oral presentations.

DANC 211. Ballet Technique II. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum total of 8 credits on the recommendation of the chair. Prerequisites: dance major and DANC 112, or departmental approval; completion of DANC 211 to enroll in DANC 212. Intermediate-level study, training and practice of ballet technique.

DANC 212. Ballet Technique II. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum total of 8 credits on the recommendation of the chair. Prerequisites: dance major and DANC 112, or departmental approval; completion of DANC 211 to enroll in DANC 212. Intermediate-level study, training and practice of ballet technique.

DANC 213. Beginning/Intermediate Pointe. 1 Hour.

Semester course; 2 studio hours. 1 credit. Course restricted to dance majors. Study and practice of pointe technique, including barre and center floor work using proper body alignment and safe movement mechanics.

DANC 221. Tap Technique II. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

DANC 222. Tap Technique II. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

DANC 230. Dance in Hollywood. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will use an interdisciplinary approach to investigate how dance on screen has been portrayed in 21st-century Hollywood films. Students will learn how to discuss dance and choreography as a cultural lens for contemporary issues. Through film viewings, readings and lectures, the role of dance will be examined in relation to how it perpetuates and challenges issues of power, race, class, gender, sexual orientation and age. Students will discuss popular perceptions of dance, dance in Hollywood and dance as a reflection of the political within the past 20 years.

DANC 251. Jazz Technique II. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits.
Prerequisites: DANC 151, 152, or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

DANC 252. Jazz Technique II. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits.
Prerequisites: DANC 151, 152, or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

DANC 253. Pilates. 1-2 Hours.

Semester course; 2-4 laboratory hours. 1-2 credits. Students engage in a physical practice: matwork of the Pilates system, built on the work of Joseph H. Pilates. The practice is designed to improve muscular-skeletal performance, strength, flexibility and endurance, while focusing on core stability, restoring the optimal curves of the spine, relieving tension and enhancing self-confidence. Basic muscular anatomy and kinesiology will also be integrated into instruction and cuing for greater body awareness.

DANC 254. Yoga. 1-3 Hours.

Semester course; 2-6 laboratory hours. 1-3 credits. Students engage in a physical practice based on yoga, taught from an experiential, philosophical and anatomic perspective, with an emphasis on dynamic flow that links breath and movement.

DANC 255. Hip Hop Dance. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: dance major or permission of instructor. Intermediate-level dance technique class that draws on the hip hop aesthetic to create a movement experience that emphasizes individual style, rhythmic awareness and physical prowess.

DANC 256. Hip Hop Dance. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: dance major or permission of instructor. Intermediate-level dance technique class that draws on the hip hop aesthetic to create a movement experience that emphasizes individual style, rhythmic awareness and physical prowess.

DANC 260. Dance Production Workshop. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: dance major or permission of instructor. An introduction to the basic principles of dance lighting and technical theatre through lecture, practical demonstration and discussion.

DANC 261. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a major dance concert.

DANC 262. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a major dance concert.

DANC 291. Topics in Dance. 1-4 Hours.

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topics to be offered each semester.

DANC 293. Professional Performance: Trainee Level First Year. 7 Hours.

Continuous course; 7 credits per semester. Prerequisite: official trainee status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as a trainee with a professional dance company approved by VCU Dance.

DANC 294. Professional Performance: Trainee Level First Year. 7 Hours.

Continuous course; 7 credits per semester. Prerequisite: official trainee status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as a trainee with a professional dance company approved by VCU Dance.

DANC 301. Modern Dance Technique III and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 202, or departmental approval; completion of DANC 301 to enroll in DANC 302. Advanced study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination, kinesthetic awareness and aesthetic sensitivity. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 302. Modern Dance Technique III and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 202, or departmental approval; completion of DANC 301 to enroll in DANC 302. Advanced study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination, kinesthetic awareness and aesthetic sensitivity. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 303. Choreography/Performance. 2 Hours.

Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: DANC 206. Enrollment is restricted to dance majors who have successfully completed the sophomore readmittance evaluation. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

DANC 304. Choreography/Performance. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: DANC 205 and DANC 206, and successful completion of the sophomore readmittance evaluation; and DANC 303. Enrollment is restricted to dance majors. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

DANC 305. Advanced Improvisation. 2 Hours.

Semester course; 3 studio hours. 2 credits. Prerequisite: DANC 105 or permission of instructor. Advanced exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention and movement creativity. This class will utilize exercises in body imaging, patterning, energy, trust, risk-taking and creativity. The class will also investigate specific improvisational forms, including contact improvisation and environmental improvisation.

DANC 307. Music and Dance Forms for Trainees. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 105 and 394, or permission of instructor. An exploration of the various traditional and nontraditional concepts of music that are used in collaboration with dance. Course includes lecture, reading, listening and viewing of choreography with writing and movement assignments.

DANC 311. Ballet Technique III. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 212, or departmental approval; completion of DANC 311 to enroll in DANC 312. Advanced training, study and practice of ballet technique focusing on the refinement and performance skills.

DANC 312. Ballet Technique III. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 212, or departmental approval; completion of DANC 311 to enroll in DANC 312. Advanced training, study and practice of ballet technique focusing on the refinement and performance skills.

DANC 313. Dance in World Cultures. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: DANC 103-104 and UNIV 200 or HONR 200, or permission of instructor. This course is the third in a sequence that fulfills one of the general education writing intensive requirements for dance majors. Students learn and participate in dance styles of various world cultures as they study cultural traditions and how they are expressed in movement. No dance experience necessary. This course will include lectures, readings, research and discussion. Students will engage in the viewing and discussion of films, videos and dance concerts.

DANC 315. Contact Improvisation. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum total of 6 credits. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

DANC 316. Contact Improvisation. 2 Hours.

Semester courses; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 101, 102, or permission of instructor. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

DANC 317. Anatomy for the Dancer. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: dance major and UNIV 200 or HONR 200. A Web-based, self-study course designed for dance students. Integrates the study of anatomy with dance terminology, skills and concepts. Covers basic knowledge of skeletal, muscular and nervous systems of the body and applies this information to principles important to dance.

DANC 318. Dance Science. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: dance major and DANC 317. A team-taught lecture and laboratory course that applies anatomical and basic kinesiological concepts to dance technique. Students will analyze and assess dance movement using scientific principles as well as study the interplay between the aesthetic qualities and biomechanics of dance technique, and the role of this study in injury prevention.

DANC 319. Screen Dance. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Enrollment is restricted to students with experience in movement, performance and/or video/film, or with permission of the instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography. Crosslisted as: KINE 319.

DANC 321. Partnering. 2 Hours.

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum total of 4 credits. Enrollment restricted to dance majors. Investigation and practice of traditional to contemporary partnering concepts supporting the fundamental through advanced development of skills necessary for a dancer and choreographer.

DANC 360. Lighting Design for Dance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: DANC 260 or permission of instructor. Open to qualified School of the Arts majors only. A study in the art of lighting design as it evolves from the choreographer/designer collaboration. The basic techniques of drafting, use of color and composition of space related to light and movement.

DANC 361. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Dance rehearsals and production of work for a major dance concert.

DANC 362. Rehearsal and Performance. 1-3 Hours.

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Dance rehearsals and production of work for a major dance concert.

DANC 365. Sound Design for Dance. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: DANC 107, DANC 205 and DANC 206. Enrollment is restricted to majors in the Department of Dance and Choreography or requires permission of the instructor. This course introduces diverse perspectives on sound design for live and video dance and provides an overview of sound as a form of communication and an artistic practice. Instruction will focus on how sound design conveys meaning and how sound interacts with visual experience, including dance, art installations, performance, video and film. Designing great sound scores begins by deeply listening to sounds and environments and thinking about how to expressively create drama and emotion for the audience. This is a project-based course designed to help students complete sound designs for their own work.

DANC 371. Repertory. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

DANC 372. Repertory. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

DANC 393. Professional Performance: Trainee Level Second Year. 8 Hours.

Continuous course; 8 credits per semester. Prerequisite: official apprentice status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as an apprentice with a professional dance company approved by VCU Dance.

DANC 394. Professional Performance: Trainee Level Second Year. 8 Hours.

Continuous course; 8 credits per semester. Prerequisite: official apprentice status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as an apprentice with a professional dance company approved by VCU Dance.

DANC 401. Modern Dance Technique IV and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 18 credits on the recommendation of the department chair. Prerequisites: dance major and DANC 302, or departmental approval; completion of DANC 401 to enroll in DANC 402. Preprofessional study and training in modern dance technique. Movement studies demanding a superior level of clarity, strength and flexibility. Movement patterns demanding a high level of coordination, deep kinesthetic awareness and aesthetic sensitivity. Exploration of a wide range of performance qualities. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 402. Modern Dance Technique IV and Workshop. 3 Hours.

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 18 credits on the recommendation of the department chair. Prerequisites: dance major and DANC 302, or departmental approval; completion of DANC 401 to enroll in DANC 402. Preprofessional study and training in modern dance technique. Movement studies demanding a superior level of clarity, strength and flexibility. Movement patterns demanding a high level of coordination, deep kinesthetic awareness and aesthetic sensitivity. Exploration of a wide range of performance qualities. Course includes weekly group exploration of techniques related to all areas of dance.

DANC 405. Composition for Trainees. 3 Hours.

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 307, or departmental approval; completion of DANC 405 to enroll in DANC 406. Exploration and research of the elements of choreography.

DANC 406. Composition for Trainees. 3 Hours.

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 307, or departmental approval; completion of DANC 405 to enroll in DANC 406. Exploration and research of the elements of choreography.

DANC 407. Teaching Methods for Dance. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: dance major and DANC 302. The student learns to analyze and communicate movement in a variety of teaching situations. The student will have an opportunity to observe different teaching techniques and to practically apply learned teaching concepts and theories.

DANC 408. Children's Pedagogy. 2 Hours.

Semester course; 2 lecture and 1 practicum hours. 2 credits. Enrollment is restricted to dance majors or with permission of the instructor. This course offers an examination of teaching principles and theories specific to children's dance. Primarily focusing on creative dance and Western forms of movement for toddlers through age 14, students will learn to analyze, observe and communicate teaching concepts and theories of movement while considering the physical, cognitive and developmental stages of a child's growth. This course is designed to prepare students for future employment opportunities within privately owned dance studios.

DANC 411. Ballet Technique IV. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. May be repeated for a maximum total of 12 credits. Prerequisites: dance major and placement audition or permission of the chair; completion of DANC 411 to enroll in DANC 412. Preprofessional study and practice of ballet technique focusing on the refinement of technical skills and the elements of dynamic performance in ballet.

DANC 412. Ballet Technique IV. 2 Hours.

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. May be repeated for a maximum total of 12 credits. Prerequisites: dance major and placement audition or permission of the chair; completion of DANC 411 to enroll in DANC 412. Preprofessional study and practice of ballet technique focusing on the refinement of technical skills and the elements of dynamic performance in ballet.

DANC 413. African American Presence in American Dance, Performance and Social Contexts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: DANC 103-104 and UNIV 200 or HONR 200, or permission of instructor. This course is an option for the third course in a sequence that fulfills a writing intensive requirement for dance majors only. Examines African-American history, culture and aesthetics as they relate to dance in American social and performance contexts. Includes lectures, readings, research and video screenings.

DANC 414. Summer Dance Workshop. 1-3 Hours.

Semester courses; variable hours. 1 or 3 credits per semester. May be repeated for credit. Flexible course offerings in dance technique, improvisation, composition, rhythmic training and repertory. See the Schedule of Classes for specific topics to be offered each semester.

DANC 415. Black Performance Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: DANC 103, DANC 104 and UNIV 200. This course will focus on performance as apt method for analysis of notions/experiences of Blackness. Students will read scholarly texts which contend with the ubiquity of Black death and gratuitous violence alongside sonic, visual and written texts by significant cultural contributors – including works by Rihanna, Dapper Dan, Cardi B, Beyonce and Janet Mock – in order to examine and contend with expressions of complex personhood by people who exist under the constant threat of annihilation. The course focuses on embodied knowledge – that is, the harnessing of insight derived from lived experiences of hegemonic racial, gender, sexual and class subjection – and how such wisdom is transformed into strategies, tactics and tools that enable black people to acquire the human and material resources needed for survival. Crosslisted as: GSWS 415.

DANC 450. Professional Project. 2-9 Hours.

Semester course; 3-9 credits. May be repeated for a maximum of 12 credits. Prerequisite: dance major. An individualized program in research and/or practicum within a professionally-oriented organization, subject to approval of the department faculty.

DANC 451. Careers in Dance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: dance major. Realistic aspects of the dance profession, as performer, teacher and researcher. The student's learning experience culminates in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

DANC 455. Dance Criticism. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: DANC 103, DANC 104 and UNIV 200. Enrollment is restricted to dance majors and minors. Students in this course will consider dance criticism from historical and contemporary perspectives, investigating issues of culture, identity and power. Students will engage with the practice of writing dance criticism as a creative act, considering both poetics and mechanics. Students will read and respond to contemporary and historical dance reviews and essays; read and respond to poetry as a practice which fuels their creativity and invention as writers grappling with the ephemerality of dance; and will write and revise reviews of performances.

DANC 460. Business of Dance. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: UNIV 200. Enrollment restricted to dance majors. Investigation of diverse business models in dance performance, creation, production and administration.

DANC 490. Senior Project. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: DANC 302 and DANC 303. Enrollment is restricted to dance majors who have completed the "creative practicum" requirement and have departmental approval. The culmination of the student's learning experience in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

DANC 491. Topics in Dance. 1-4 Hours.

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topics to be offered each semester.

DANC 492. Independent Study in Dance. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: dance major status and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

Dance and Choreography Lab (DANZ)**DANZ 111. Ballet Technique I Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 111 to enroll in DANZ 112. Corequisites: DANC 111-112. Dance major or permission of instructor. Reinforcement in the study of ballet technique at the fundamental level. Emphasis focusing on alignment and in-depth practice of ballet steps. An extension of DANC 111-112 to be taken concurrently.

DANZ 112. Ballet Technique I Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 111 to enroll in DANZ 112. Corequisites: DANC 111-112. Dance major or permission of instructor. Reinforcement in the study of ballet technique at the fundamental level. Emphasis focusing on alignment and in-depth practice of ballet steps. An extension of DANC 111-112 to be taken concurrently.

DANZ 211. Ballet Technique II Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: dance major and DANC/DANZ 112, or departmental approval; completion of DANZ 211 to enroll in DANZ 212. A reinforcement in the study of ballet technique at the intermediate level. An extension of DANC 211-212 to be taken concurrently.

DANZ 212. Ballet Technique II Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: dance major and DANC/DANZ 112, or departmental approval; completion of DANZ 211 to enroll in DANZ 212. A reinforcement in the study of ballet technique at the intermediate level. An extension of DANC 211-212 to be taken concurrently.

DANZ 311. Ballet Technique III Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 6 credits on the recommendation of the chair. Prerequisites: completion of DANZ 311 to enroll in DANZ 312. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the advanced level. May be taken concurrently with DANC 311-312.

DANZ 312. Ballet Technique III Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 6 credits on the recommendation of the chair. Prerequisites: completion of DANZ 311 to enroll in DANZ 312. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the advanced level. May be taken concurrently with DANC 311-312.

DANZ 411. Ballet Technique IV Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 411 to enroll in DANZ 412. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the preprofessional level. An extension of DANC 411-412, which can be taken concurrently.

DANZ 412. Ballet Technique IV Laboratory. 1 Hour.

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 411 to enroll in DANZ 412. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the preprofessional level. An extension of DANC 411-412, which can be taken concurrently.

Fashion Design and Merchandising (FASH)**FASH 120. Introduction to the Fashion Industry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to fashion merchandising majors. This is a survey of the apparel industry to guide students to an understanding of the factors contributing to, forming and shaping the fashion industry. Additionally, students are introduced to the art, business and craft in developing and marketing fashion product emphasizing the role of the designer and the various stages of production.

FASH 145. Computers for Fashion I. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Laptop computer required. Basic computer skills required. This course introduces students to contemporary technology with emphasis on basic computer graphics software used in the fashion industry today.

FASH 201. Construction Techniques. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. The basic principles involved in garment construction with emphasis on professional design-room practices in sewing, pressing and finishing of garments. Knowledge of basic sewing is advisable.

FASH 202. Draping. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: FASH 201. Basic principles of three-dimensional patternmaking by draping muslin on a dress form. Student will be required to purchase the specified dress form.

FASH 203. Patternmaking I. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Introduction of basic principles of patternmaking, developing various styles from master patterns and creating designs to be constructed in muslin. Students also will draft a set of master patterns and learn to "true" the pattern to produce production-ready patterns.

FASH 204. Patternmaking II. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: FASH 203. Development of intermediate skills for patternmaking, of increasing complexity to be constructed in muslin. Students will draft a set of master patterns.

FASH 205. Fashion Drawing I. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Introduction to the fashion figure working from models and photographs. Covers flat drawing techniques and fashion design theory. Explores different media and the use of color.

FASH 206. Fashion Drawing II. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: FASH 205. Further development of drawing the fashion figure and expanded exploration of media and materials.

FASH 210. Visual Merchandising. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Theory and practical application of visual merchandising techniques in the fashion industry. Development of design concepts, fixturing, layout and presentation for retail, manufacturing and special events. Use of computer-aided design.

FASH 245. Computers for Fashion II. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: FASH 145. Laptop computer required. Assumes basic computer skills. This course introduces advanced skills in technology by utilizing graphic, illustration and desktop publishing software as they are used in the fashion industry.

FASH 250. Concepts of Fashion Merchandising Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Basic research techniques and analysis skills for evaluating contemporary fashion and apparel topics.

FASH 260. Survey of Luxury Fashion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 120. Enrollment is restricted to fashion design and merchandising majors. Provides an overview of the luxury fashion industry. The class includes the history of the luxury fashion industry, as well as covering the forecasting, development, branding, marketing, buying, selling and counterfeiting of luxury fashion products. Students explore the luxury fashion industry through lectures, assignments and face-to-face exposure to suppliers, manufacturers and retailers in the luxury sector.

FASH 290. Textiles for the Fashion Industry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to develop an understanding of the factors which influence the tactile behaviors of fabrics during garment design, manufacture and wear. Apparel fiber construction, finish and properties both natural and man-made will be analyzed.

FASH 301. Design I Studio: Draping. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated for a maximum of six credits. Prerequisites: FASH 202 and FASH 204. A course that focuses on draped methods of garment design, reflecting current fashion emphasis.

FASH 302. Design I Studio: Tailoring. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated for a maximum of six credits. Prerequisites: FASH 202 and FASH 204. A course that focuses on tailored methods of garment design, reflecting current fashion emphasis.

FASH 303. Design Theory and Illustration I. 3 Hours.

Semester course; 6 studio hours. 3 credits. Prerequisite: FASH 206. Enrollment is restricted to fashion design majors. Students will gain understanding of creative approaches to designing and illustrating garments, from concept to finished illustration.

FASH 304. Design Theory and Illustration II. 3 Hours.

Semester course; 6 studio hours. 3 credits. Prerequisite: FASH 303. Enrollment is restricted to fashion design majors. A continuation and expansion of the skills and theory in the prerequisite course. Students will refine creative approaches to designing and illustrating garments, from concept to finished illustration.

FASH 319. Contemporary Fashion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An in-depth study of fashion beginning at the Industrial Revolution and continuing to the present from a historical and socioeconomic point of view. Hands-on examination of vintage garments and field trips to museum collections.

FASH 320. Twenty-first Century Fashion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200. Enrollment restricted to fashion students or those in the School of the Arts. This course explores the history of fashion starting in the 1980s and continues into the New Millennium. It explores trends, designers and movements that affect fashion.

FASH 330. The Business of Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. It also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: IDES 330/GDES 330.

FASH 340. Portfolio Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 145 or FASH 345. Enrollment is restricted to fashion merchandising majors and fashion merchandising minors. In this course, students will explore their personal values and professional goals to develop resources, which will enhance their ability to creatively display their fashion merchandising and marketing skills in the pursuit of meaningful and fulfilling fashion careers.

FASH 341. Merchandise Planning and Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Theory and mathematical application of the major elements of retail buying and merchandising. Discussion covers planning and control of inventory, profit analysis, merchandise pricing and purchase negotiation.

FASH 342. Retail Buying Simulation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 341 and INFO 162. Practical application of retail buying in relation to the calculations for a six-month buying plan for a department within a department store. The simulation includes projection of sales, stock levels, markdowns, purchases, gross margins, markup, etc.

FASH 343. Fashion Forecasting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Using basic principles to identify, track and analyze current trends, students will develop a fashion forecast. Demographic, economic, social and historical forces of behavior will be evaluated.

FASH 345. Computers for Fashion Design: Adobe Photoshop and Illustrator. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Laptop computer and basic computer skills required. Students will learn to conceptualize fashion design while gaining an understanding of graphic and illustration software through the utilization of the computer as a drawing and communication tool.

FASH 346. Fashion Website Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 145, FASH 245 or FASH 345. Enrollment is restricted to fashion merchandising and fashion design majors and fashion merchandising minors. A high-energy, fast-paced simulation, this course examines the fundamental concepts of fashion business website development, primarily related to fashion, branding and e-commerce. The class is a group simulation and includes planning, building, designing, executing, marketing, branding and maintaining a successful fashion e-commerce website. Groups work collaboratively, creatively and analytically to build the website from the ground up for a fictional clothing company, including product pages, look books and social media campaigns.

FASH 350. Fashion Promotion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Through lecture and field experience, students are exposed to technical and creative aspects of fashion promotion and public relations. A variety of media are utilized. Students may be required to spend time outside the classroom on promotional activities.

FASH 360. Merchandising Luxury Fashion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 120 and FASH 341. Enrollment is restricted to fashion merchandising majors and fashion merchandising minors. This course is an exploration of the merchandising of the luxury fashion sector, which includes the forecasting, product development, branding, marketing, buying, selling and counterfeiting of luxury products. Students explore the luxury fashion industry through lectures, assignments and face-to-face exposure to suppliers, manufacturers and retailers in the luxury sector.

FASH 370. Design History: 20th and 21st Centuries. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: GDES 370/IDES 370.

FASH 380. Fashion Branding. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will understand the concept of fashion branding and the processes necessary to successfully develop or redevelop a fashion brand.

FASH 390. Historic and Ethnic Textiles. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 290 or IDES 446 or permission of instructor. An examination of the history of textile design and production around the world. Crosslisted as: INTL 390.

FASH 391. Fashion Workshop. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. A topical workshop offered in various areas of fashion not included in the regular curriculum. See the Schedule of Classes for specific topics to be offered each semester.

FASH 392. Exploring Textile Applications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Corequisite: FASH 290. Enrollment is restricted to fashion merchandising and design majors and fashion merchandising minors. This course uses a tactile, exploratory, hands-on approach and dives into textiles and textile applications as they are used within the fashion industry. This workshop is designed to be an in-depth, lab-based supplement to the prerequisite. Students work collaboratively and independently with a wide range of textile materials to gain a deeper understanding of the technical properties and physical characteristics, such as hand and drape, of the raw materials, construction techniques and finishing applications most commonly used in the fashion industry.

FASH 401. Design II Studio. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisites: completion of all sophomore studio courses and permission of instructor. A series of upper-level design classes for the advanced or skilled student, reflecting current topics in the fashion industry. See the Schedule of Classes for specific topics to be offered each semester.

FASH 402. Design II Studio. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Enrollment is restricted to fashion design junior- and senior-level students who have completed all sophomore studio courses. A series of upper-level design classes for the advanced or skilled student, reflecting current topics in the fashion industry. See the Schedule of Classes for specific topics to be offered each semester.

FASH 403. Design Theory and Illustration I. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisite: completion of all Department of Fashion sophomore studio courses. A series of design theory and illustration topics that address current fashion and support the Department of Fashion design courses. See the Schedule of Classes for specific topics to be offered each semester.

FASH 404. Design Theory and Illustration II (Portfolio). 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Enrollment is restricted to students who have completed all departmental sophomore and junior studio courses. Advanced design theory and illustration course that teaches students to develop senior portfolios of original design work, including other tools and presentation skills with mock interviews necessary in order to obtain jobs in the field of fashion design.

FASH 405. Middle of Broad Studio. 3 Hours.

Semester course; 6 studio hours. 3 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Students will work in an interdisciplinary design environment on community-based design projects. The course is a designated service-learning course.

FASH 440. Line Development Studio. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 341 (for merchandising concentration); permission of the instructor (for fashion design concentration). Enrollment is restricted to fashion design and fashion merchandising majors and minors. Students will learn the fundamentals of producing a line of apparel from the design concept to the consumer. Students will collaborate and work on teams with emphasis placed on market research, specification sheets, costing, sourcing, production and sales, which will yield a three-dimensional item/object. Additionally, the course requires an online promotional component.

FASH 442. Advanced Show Production. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A practical application of the production, planning and execution of a professionally staged and choreographed fashion show featuring the Department of Fashion Design and Merchandising students' juried work.

FASH 443. Supervision and Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The study of advanced leadership skills as they relate to the fashion industry. Topics include team building, negotiations, time and stress management, and communications. Emphasis placed on leadership and supervision skills across cultures.

FASH 445. Fashion Entrepreneurship. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 341 and FASH 342. Studies operational functions as related to the objective and decision-making procedures inherent in successful small-business retailing. Quantitative strategies will be applied as students develop a model plan for a retail business.

FASH 450. Line Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to fashion majors. Students will learn the fundamentals of producing a line of apparel, accessories or home fashions from conception to consumer. Emphasis will be placed on market research, specification sheets, costing, sourcing, production and sales.

FASH 451. Importing and Exporting Fashion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to fashion majors. An overview and introduction to import/export theory, government regulations and global sourcing. Students will gain insight into the dynamics and cultures of the international fashion marketplace.

FASH 490. Fashion Seminar. 1 Hour.

Short course (5 weeks); 3 lecture hours. 1 credit. A professional seminar for senior fashion majors. Lectures will cover career opportunities and job preparation.

FASH 491. Studio Topics in Design. 1-3 Hours.

Semester course; 2-6 studio hours. 1-3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisites: FASH 301 and FASH 302. An in-depth study of a selected topic in fashion not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

FASH 492. Independent Study in the Fashion Industry. 1-3 Hours.

Semester course; 1-3 credits. May be repeated. Prerequisite: junior or senior standing as a major in fashion design or fashion merchandising. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor; approval of department chair necessary prior to registration. This course will be limited to those students who have demonstrated intense commitment to a particular area of study within the fashion industry.

FASH 493. Fashion Internship. 1-6 Hours.

Semester course; variable hours. 1-6 credits. Repeatable in combinations for a maximum of 6 credits. Open to junior- and senior-level fashion majors only. An on-the-job practicum in which students apply the formal classroom and studio training they have received in their option (design, merchandising).

Graphic Design (GDES)

GDES 202. Design Technology. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. A design foundation workshop that emphasizes skills development and application of design technology: time and project management, visual thinking, image capturing and editing.

GDES 205. Design Methods and Processes. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. An in-depth investigation of the theoretical aspects of the design process within the context of designing effective visual communications.

GDES 211. Typography I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. An introduction to communication problem-solving through the visual medium of language. The fundamentals of typography and typographic design are explored in experimental and practical projects.

GDES 212. Design Form and Communication. 3,6 Hours.

Semester course; 2 lecture and 3 studio hours or 4 lecture and 6 studio hours. 3 credits for Richmond; 6 credits for VCUQ. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. The relationship of form and communication in graphic design is explored through theoretical and applied projects. The impact of typography and imagery and their syntactic relations upon audience and content is stressed.

GDES 213. Typography II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 211. An intermediate exploration of typography as an expressive and functional communication vehicle. Emphasis is placed on defining effective design criteria to meet the reader's needs, the communicator's intent and the designer's formal sensibilities.

GDES 214. Imaging I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment requires successful completion of the Art Foundation Program. A studio course focusing on the use of digital imaging techniques for communication purposes. The processes and techniques for making and working with digital images are explored.

GDES 216. Imaging II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 214. A studio course focusing on the creation of visual images for communication purposes. The processes and media for making visual images and the limits of visual literacy are explored.

GDES 220. Design Practices. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This studio is an introduction to research, analysis and the interpretation of content, emphasizing how hierarchical and syntactic structures participate in the making of meaning. Students are oriented as shapers and interpreters within culture.

GDES 221. Core Studio I. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This studio is an introduction to the generation and control of form. This involves the exploration of methods, materials and language. Students are oriented to fundamental modes of design practices.

GDES 222. Core Studio II. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This studio reinforces methods, materials and language used in generating and organizing form. Students examine the potential and implications of design processes and their outcomes.

GDES 231. Theory Inquiry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This inquiry course is an overview of theory and philosophy influencing graphic design as a situated practice. Students are exposed to design criticism and theoretical perspectives from a variety of disciplines.

GDES 252. History of Visual Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of contemporary visual communication concepts, media and images, and their role in contemporary society.

GDES 253. Theory and Philosophy of Visual Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of theoretical and philosophical issues influencing the practice of visual communication design.

GDES 301. Letterpress. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. A letterpress printing studio course designed for students interested in being introduced to and developing their visual vocabulary in letterpress and relief printing. Students will undertake critical analysis of the letterpress medium and utilize techniques to develop and produce finished editions of each assigned task.

GDES 302. Book Arts. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. An introduction to the tools, materials and craft of contemporary bookmaking. Investigation of bookbinding, handcraft and related techniques.

GDES 308. Web Design. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. A course developing the design of websites. Emphasis is placed on the visual design, navigation, development, communication and authoring of websites.

GDES 321. Core Studio III. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This studio examines systems and structures as frameworks for design methods, processes and outcomes. Students broaden their practice relative to scale, context, conditions and effect.

GDES 322. Core Studio IV. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This studio expands critical discourse to investigate design's impact through distribution and engagement. Students consider how their personal voice and point of view function in a larger context.

GDES 330. The Business of Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. It also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: IDES 330/FASH 330.

GDES 331. Precedents Inquiry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This inquiry course is a pluralistic survey of precedents and historical examples of design with an emphasis on multiple perspectives and power structures. Students will encounter design histories through a source-based approach.

GDES 343. Systems in Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 205, GDES 213 and GDES 216. The study of systematic and methodological approaches to communication design through the solving of complex problems in visual communication. Emphasis is placed on objective process and research in approaches to various professional situations.

GDES 345. Print I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 205, GDES 213 and GDES 216. An introduction to the design process and applied realizations of print-based materials and outcomes. Addresses the form and communication of the printed page from the tradition of print to the organizational principles outside that tradition. Objectives accomplished through lectures, demonstrations and problem-solving.

GDES 346. Visual Narrative I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 205, GDES 213 and GDES 216. Studio course that introduces the conceptual and technical issues involved in the design and production of sequential documents and time-based compositions. Addresses the possibilities and limitations of the integration of word, image, video and sound as they relate to problem-solving in visual communication.

GDES 347. Interaction I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 205, GDES 213 and GDES 216. An introduction to the conceptual and technical issues involved in the design and production of interactive documents and environments. Addresses the possibilities and limitations of computer-generated images, sound and digital video as they relate to problem-solving in visual communication.

GDES 356. Studio Management. 4 Hours.

Semester course; 4 lecture hours. 4 credits. A study of business and management factors that relate to creative design. Topics include marketing, structure and organization; financial factors; ethical and legal aspects; and management of design, illustration and photography studios.

GDES 365. Print II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 345. An advanced studio course devoted to the study of systematic and methodological approaches to the design process and applied realization of print-based materials and outcomes. Emphasizes rigorous objective and experimental research methods in approaches to various professional situations. Objectives accomplished through lectures, demonstrations and team-based approaches to problem-solving.

GDES 367. Interaction II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 347. A studio course devoted to the design and production of advanced projects in interaction design and experience design with focus on research, problem definition and team-based approaches to problem-solving.

GDES 370. Design History: 20th and 21st Centuries. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: FASH 370/IDES 370.

GDES 380. Multi Studio I. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. May be repeated for a maximum total of 8 credits. This studio emphasizes critical engagement, research and speculation. Students engage in collaboration, peer learning and interdependent discovery.

GDES 391. Lecture Topics in Design. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be taken for a maximum of four credits per semester and repeated for a maximum of 12 credits. Topical lectures focused on evolving and emergent issues that affect contemporary design practice. Upper-level students outside of the graphic design major may take this course with an override.

GDES 392. Research/Individual Study. 1-4 Hours.

Semester course; 2-8 studio hours. 1-4 credits. May be repeated for a total of eight credits. Enrollment is restricted to students with permission of the instructor, approval of faculty adviser and department chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem-seeker and -solver with the ability to carry out self-stated goals.

GDES 398. Dialogues. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for a maximum total of six credits. This course engages students in peer-to-peer reflection, dialogue and debate in order to further develop an understanding of the diversity and scope of design practices. Graded as pass/fail.

GDES 401. Experimental Letterpress. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. An advanced print studio course designed for students interested in exploring their visual vocabulary in digital and letterpress relief printing. Students will undertake critical analysis of the combined media of digital and letterpress and utilize techniques inherent within each technology to develop and produce finished editions.

GDES 403. Design Activism. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. This course explores relationships between design, activism, advocacy and organizing. Students will critically examine the politics of design practice and the artifacts and systems design practice activates. Working with internal and external collaborators, students will interpret the relevance of social and political topics, pose critical questions and provoke new relationships within the spaces they occupy.

GDES 404. Typeface Design. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. Glyph construction is explored through historical and methodological analysis as well as the creation of typographic systems. Formal mechanics of typefaces are emphasized in discussion of their function as vehicles for communication. Both the functional and expressive nature of typefaces are examined through hands-on exercises.

GDES 408. Advanced Web Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 308. Investigation into the design and development of dynamic websites. Introduces database integration, webhost management and advanced coding techniques. Emphasis is placed on the semantic design and development of content-rich websites and blogs.

GDES 412. Typographic Systems. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. Advanced approaches to typographic design with focus on typography as a primary interface to information.

GDES 413. Package Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 213 and 367. Theoretical and studio investigation of three-dimensional structural principals as they relate to the area of packaging, exhibition and environmental design.

GDES 414. Exhibition and Environmental Graphic Design. 4 Hours.

Semester course; 1 lecture and 6 studio hours. 4 credits. Study of the presentation of information in large-scale, multi-dimensional formats. Exploration of exhibition and environmental design, including understanding the use of "wayfinding" and "wayshowing" (identification, interpretation and orientation), sensitivity to and awareness of human factors, and developing visual and experiential navigation solutions.

GDES 417. Interdisciplinary Team Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 213 and 366. Advanced projects in visual communication in which student design teams solve complex problems requiring collaboration.

GDES 418. Design Center. 3-9 Hours.

Semester course; 2-6 lecture and 3-9 studio hours. 3-9 credits. May be repeated for a total of 12 credits. Enrollment requires portfolio review by faculty. A professional studio to give students practicum experience working with faculty on self-initiated and client-initiated, real-world design projects.

GDES 431. Critical Inquiry. 4 Hours.

Semester course; 3 lecture and 2 studio hours. 4 credits. This inquiry course is focused on research, critical analysis and discussion. Students assess and reflect on their emerging practice and its relation to the field.

GDES 440. Synthesis. 6 Hours.

Semester course; 12 studio hours. 6 credits. Prerequisite: GDES 431. This studio provides students the opportunity to synthesize knowledge, skill and experiences accumulated over their progression through the program. Students are required to define and execute a capstone project that demonstrates their readiness and capacity to engage responsibly and creatively in the field. The class culminates in a public exhibition.

GDES 445. Problem Seeking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A seminar exploring the nature, scope and implications of defining design objectives in terms of limitations, requirements and potentials of a product's implementation, performance and life cycle.

GDES 470. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of selected theoretical, historical, aesthetic and social areas of concern to the graphic designer. Scholarly research, critical analysis and discussion are expected.

GDES 472. Senior Studio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. A capstone course oriented toward the creation of a professional portfolio, self-promotional materials and business system. The course culminates in the annual Senior Show.

GDES 480. Multi Studio II. 2 Hours.

Semester course; 4 studio hours. 2 credits. Prerequisite: GDES 380. Utilizing principles and skills gained in the prerequisite course, students facilitate discourse, framing and articulation of creative partnerships.

GDES 481. Practicum. 2-4 Hours.

Semester course; 2-4 field experience hours. 2-4 credits. Students must be actively engaged in work for a minimum of 30 hours per credit. This course engages students in practical experiences related to the contemporary and future practice of design and research through hands-on learning under the supervision of qualified practitioners. Graded as pass/fail.

GDES 491. Studio Topics in Design. 1-6 Hours.

Semester course; 2-12 studio hours. 1-6 credits. May be repeated for a maximum of 16 credits. Studio focusing on evolving and emergent topics that affect contemporary design practice.

GDES 492. Design Internship. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Prerequisites: senior standing, 3.0 GPA or permission of the chair. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

Interior Design (IDES)**IDES 103. Introductory Studio Course. 2 Hours.**

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. This course is an introduction to the complex and multifaceted field of interior design as an applied art and as a business for non-interior design majors. Basic design elements, principles and practices, historical and related architectural background material will be reviewed.

IDES 104. Introductory Studio Course. 2 Hours.

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. This course is an introduction to the complex and multifaceted field of interior design as an applied art and as a business for non-interior design majors. Basic design elements, principles and practices, historical and related architectural background material will be reviewed.

IDES 201. Introductory Interior Design Studio I. 4 Hours.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: all Art Foundation courses. Corequisites: IDES 211 and 231. Interior design majors only; other School of the Arts majors by approval. Introduction to identification and applications of fundamental interior design issues through applied projects. Emphasis includes developing design ideas, understanding design philosophies, design principles and elements, human factors, defining and solving problems creatively, analyzing spatial and functional requirements, applying design processes, creating an aesthetic space, and preparing a presentation as related to interior design.

IDES 202. Introductory Interior Design Studio II. 4 Hours.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: IDES 201, 211 and 231. Corequisites: IDES 212, 252 and 311. Interior design majors only; other School of the Arts majors by approval. Expands upon the interior design issues introduced in IDES 201 through their application in small scale interiors projects of increasing size and complexity. Emphasizes the further development of methods and processes for design development, understanding of basic design principles and elements, and ways of analyzing design requirements through written, oral, graphic and three-dimensional documentation.

IDES 211. Interior Graphics I. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation courses. Corequisites: IDES 201 and 231. Interior design majors only; other School of the Arts majors by approval. Introduction to manual graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats and model-making for professional graphic presentations.

IDES 212. Interior Graphics II. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation courses, IDES 201, 211 and 231. Corequisites: IDES 202, 252 and 311. Interior design majors only; other School of the Arts majors by approval. Laptop computer required. Introduction to computer graphic communication language and techniques in interior design drafting, rendering, perspective drawing, presentation formats and 3-D imaging for professional graphic presentations.

IDES 231. Fundamentals of Interior Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: all Art Foundation courses. Required of all incoming interior design majors. Open to interior design majors and home fashion merchandising majors only. Interior design majors are required to enroll concurrently in IDES 201 and 211. Introduction to the theories, methods and processes of interior design. Facilitates the transition of skills and knowledge from the Art Foundation Program to specific interior design applications and focuses on analysis and evaluation of interior environments as a support and supplement to the studio experience.

IDES 241. Physical and Social Behavior. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: IDES 231. Theories of behavioral and social aspects of interior design. Study of how people interpret, evaluate and act in the built environment. Social, cultural and economic factors are included.

IDES 251. Historic Environments: Ancient Through 19th Century. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. Study of the major paradigms, theories and styles of the built environment (interior design, furniture and architecture) from antiquity to the late 19th century. Contemporary analysis of cultural conditions and the manner in which designers and architects respond to those conditions.

IDES 252. Historic Environments: 20th-21st Centuries. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. Study of the major paradigms, theories and styles of architecture, interior environments and furniture from the beginnings of modernism to the present day. Contemporary analysis of cultural conditions and the manner in which designers and architects respond to those conditions.

IDES 261. What is Good Design? A Survey of 20th- and 21st-century Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course poses the question, "What is good design?" Students will consider the ways that designers have responded to major shifts in technology, politics and the environment from the early 20th century to today. The purpose of this course is to promote a greater awareness of the larger cultural context within which value and meaning are discovered in design, as well as provide a competent knowledge of the architecture, interiors, furnishings, decorative arts, graphic design, fashion and industrial design of the past and present.

IDES 301. Interior Design Studio I. 4 Hours.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: UNIV 200 or HONR 200 and successful completion of the interior design sophomore portfolio review. Corequisites: IDES 312, 321 and 323. Interior design majors only. Laptop computer required. Discussion and application of design philosophies, theories and creative design strategies at the intermediate level. Emphasis includes: research, survey and analysis, design processes, spatial and functional analysis, design elements and principles, human factors, creative problem-solving, code requirements, selection of interior components, and preparation of a presentation.

IDES 302. Interior Design Studio II. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: IDES 301. Corequisite: IDES 431. Continued discussion and application of design philosophies, theories and creative design strategies at the intermediate level and the study of construction documents on the computer as related to the design of interior environments and applied to a studio project. Emphasis includes research, survey and analysis, design processes, spatial and functional analysis, code requirements, and selection of interior components.

IDES 311. Advanced Interior Graphics I. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: IDES 201, 211 and 231. Corequisites: IDES 202, 212 and 252. Interior design majors only. Laptop computer required. Advanced manual and computer graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats and model-making for professional graphic presentations. Computer graphic techniques including software such as AutoCAD, Adobe Photoshop, Adobe Illustrator and Dreamweaver.

IDES 312. Advanced Interior Graphics II. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: IDES 311. Interior design majors only. Laptop computer required. Advanced computer graphic communication techniques in interior design including drafting, rendering, perspective drawing, presentation formats and 3-D imaging for professional graphic presentations.

IDES 321. Interior Materials and Textiles. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Interior design and home fashion merchandising students only. Investigation, selection and practical application of materials and textiles in interior environments.

IDES 322. Color in Interior Environments. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: all Art Foundation Program studio courses and IDES 231 or comparable experience by approval. Interior design and School of the Arts majors only. Advanced study of color and its impact on interior spaces; theory and practical applications.

IDES 323. Light and Color in Interior Environments. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: successful completion of the interior design sophomore portfolio review. Corequisites: IDES 301 and 312. Interior design and School of the Arts majors only. The study of illumination and color and their impact on people in interior spaces; theory and practical applications.

IDES 324. Furniture Design. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: successful completion of the interior design sophomore portfolio review or permission of instructor. Interior design, crafts, sculpture and theater design majors only. Advanced study of furniture design and custom millwork as related to the design of interior environments. Original student designs are developed through the study of structure and materials.

IDES 330. The Business of Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. It also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: FASH 330/GDES 330.

IDES 370. Design History: 20th and 21st Centuries. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: FASH 370/GDES 370.

IDES 391. Topics in Interior Design. 1-4 Hours.

Semester course; 1-4 studio or lecture hours. 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of the instructor. A study of a topical issue in interior design. See the Schedule of Classes for specific topics to be offered each semester.

IDES 400. Senior Interior Design Studio I. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: IDES 302. Corequisite: IDES 441. Continued discussion and application of design philosophies, theories and creative design strategies at the advanced level. Emphasis includes design elements and principles, human factors, creative problem-solving, preparation of a presentation, and opportunities for submitting to design competitions.

IDES 401. Senior Interior Design Studio II. 4 Hours.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: IDES 400 and 441. Corequisite: IDES 442. Interior design majors only. Department-approved senior interior design project. Advanced design experience of student's choice of an interior environment of complex scope and scale to meet the needs of specific clients and prepare students for the practice of the profession. The project addresses issues of design of the 21st century and integrates all aspects of the curriculum.

IDES 421. Construction Documents. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation Program studio courses and IDES 201, 202, 231, 212, 312 and concurrent enrollment in IDES 301, 302, 303, 304 or 401. Interior design majors only. Laptop computer required. Study of construction documents on the computer as related to the design of interior environments.

IDES 422. Building Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: IDES 301. Enrollment is restricted to interior design majors. Contemporary theories and techniques in the design of buildings as related to interior design, small structural considerations, HVAC, acoustics, plumbing and the attributes of materials.

IDES 431. ID Business Practices. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: IDES 201 and IDES 231. Interior design majors only. Writing intensive. Advanced study of the interior design profession as related to professional and business practices including: responsibilities, services, ethics, business and project management, and marketing.

IDES 441. Senior Design Seminar I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: IDES 302. Corequisite: IDES 400. Interior design majors only. Discussions of current design theories, issues and concerns of the built environment, future studies and the global community as applied to senior studio.

IDES 442. Senior Design Seminar II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: IDES 400 and 441. Corequisite: IDES 401. Interior design majors only. Continued discussions of current design theories, issues and concerns about the built environment, futures studies and the global community as applied to senior studio.

IDES 491. Topics in Interior Design. 1-4 Hours.

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of the instructor. An in-depth study of a topical issue in interior design. See the Schedule of Classes for specific topics to be offered each semester.

IDES 492. Independent Study in Interior Design. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for maximum of six credits. Prerequisite: junior or senior standing as a major in interior design. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

IDES 493. Interior Design Internship. 3 Hours.

Semester course; 3 credits. Prerequisite: IDES 431. Interior design majors only. Provides supervised practical work experiences that are coordinated with professional interior designers in the field. Formal arrangements must be made and approved by coordinator or department chair.

Kinetic Imaging (KINE)**KINE 208. Introduction to Media Arts Technologies. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Enrollment requires successful completion of Art Foundation Program and permission of department chair. Covers basic techniques and software necessary for contemporary video, animation and sound art practice.

KINE 233. Media Arts Survey. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A historical overview of contemporary media art to include experimental animation, video art, sound art, the Internet and other technology-based art movements.

KINE 234. Animation I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. An introduction to the techniques and principles of animation as frame-by-frame sequential media, covering preproduction methods particular to animation, and a survey of historical techniques with an emphasis in viewing and responding to animated work.

KINE 235. Animation II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 234. Students will build on skills learned in prerequisite course. Topics covered include principles of animation and timing, intermediate digital skills, narrative and experimental structures in animation.

KINE 236. Video I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. A survey of video as a creative medium, including but not limited to narrative, abstract and experimental approaches. This course will also cover basic video production and editing.

KINE 237. Sound Communication I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. The basic theory and production of media-based sound.

KINE 243. Video Practices. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. An introduction to video art as a creative medium, including traditional and nontraditional approaches. This course will also cover basic video production and editing.

KINE 245. Animation Practices. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. An introduction to the art and practice of animation as a sequential medium. This course will cover the principles of animation, a survey of historical techniques and relevant production methods. There will be an emphasis on viewing and responding to animated work.

KINE 247. Sound Art. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. An introduction to the art and practice of sound as a creative medium within contemporary art and experimental music. Traditional and nontraditional approaches will be explored.

KINE 291. Special Topics. 1-4 Hours.

Semester course; 1-4 variable hours. 1-4 credits. May be repeated for a maximum of eight credits. Various topics of special interest will be offered on a changing basis.

KINE 319. Screen Dance. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Enrollment is restricted to students with experience in movement, performance and/or video/film, or with permission of the instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography. Crosslisted as: DANC 319.

KINE 336. Video II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 236. Focuses on developing a unique artistic voice with an emphasis on video content and how various visual techniques can be used to express concept, mood, narrative and individual truth. This course will also cover advanced production and editing.

KINE 338. 3-D Computer Animation I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. A comprehensive introduction to the use of the computer for modeling, rendering and animating three-dimensional objects and environments.

KINE 343. Video Concepts. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: KINE 243. Focuses on developing a genuine artistic voice with an emphasis on video content and how various visual techniques can be used to express concept, mood, narrative and individual truth. This course will also cover advanced production and editing.

KINE 345. Animation Concepts. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: KINE 245. With a focus on developing a genuine artistic voice, this course will strengthen and expand upon the animation and technical skills learned in the prerequisite course. Topics covered include an in-depth exploration of the principles of animation and timing, intermediate digital skills, narrative and experimental structures in animation. There will be an emphasis on the development and processing of ideas through readings and research.

KINE 346. Survey of Sound Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of sound design as a creative medium. This course investigates the various histories of sound design and scoring trends, as well as the traditions and advancements in cinema, theatre, dance and the fine arts. By introducing students to the ways in which sound has served to support areas of performing and fine arts, while also exerting its influence and power through the strength of major figures in their respective fields, this class considers the role that sound design and scoring plays as technologies and ideas of the stage change.

KINE 347. Sound Design. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. A continuation of the creative and conceptual approaches to working with sound and sound technologies, with a focus on sound design, including the art of Foley and soundtracks for audio-visual projects, such as video, animation, gaming, installation, performance, etc.

KINE 348. 3D Computer Art. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. A comprehensive introduction to the use of the computer for modeling, rendering and animating three-dimensional objects and environments.

KINE 354. Creative Code and Electronics. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. An introduction to the concepts and techniques found within programming languages and electronics as applied to digital art making. Basic coding for creative practice from visuals to sound and interactivity will be examined as well as circuitry and hardware components for DIY projects.

KINE 357. Critical Issues in the Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Topics, theory and genre affecting media and time-based mediums are explored through critical discourse, readings, screenings and lectures.

KINE 375. Concept and Development Studio. 4 Hours.

Semester course; 8 studio hours. 4 credits. A cross-disciplinary studio that explores methods for advancing individual and collaborative or group projects from an initial concept to a finished product over a prolonged period of time. There will also be an emphasis on a variety of professional practices specific to media arts.

KINE 392. Research/Individual Study. 1-4 Hours.

Semester course; 1-2 lecture and 3-6 studio hours. 1-4 credits. May be repeated for a total of 8 credits. Enrollment requires permission of instructor, approval of faculty adviser and chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem-seeker and -solver with the ability to carry out self-stated goals.

KINE 402. Senior Research. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Critical analysis and development of a culminating project with emphasis on research, experimentation and conceptual development. By using and expanding upon the technical skills learned in other classes, students will identify the conceptual, aesthetic and technical concerns that are critical to their individual art practice.

KINE 403. Senior Studio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 402. Critical analysis and development of a culminating project with emphasis on implementation, execution and presentation.

KINE 443. Topics in Video Art. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: KINE 243. An advanced course in video art that varies in topic and approach from semester to semester. This course will also cover advanced production and editing.

KINE 445. Topics in Animation. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: KINE 245. An advanced course in animation that varies in topic and approach from semester to semester. This course will also cover advanced analog and digital experimental animation techniques. With an emphasis on animation as an expanded, research-based practice, students will be introduced to animation as fine art, animation on and off the screen, and in an installation and performance context.

KINE 447. Topics in Sound. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: KINE 247 or KINE 347. An advanced course in sound art and sound design that varies in topic and approach from semester to semester. This course will also cover advanced analog and digital techniques.

KINE 448. 3D Computer Animation. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: KINE 348. Advanced study of three-dimensional computer animation, exploring a variety of aesthetic and conceptual applications of the technology.

KINE 454. Live Coding. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: KINE 354. This course introduces live coding as a performance practice that involves real-time computer programming to create interdisciplinary work including visuals, sound, choreography and more. Students will explore a range of tools and environments for coding and examine other art forms that inform this methodology.

KINE 455. Motion Graphics. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: KINE 345. Students will study the creation of moving graphic elements as an extension of animation and video art. The development of motion graphics in commercial and broadcast studios will be examined. Students will engage in innovative development of motion graphics using current digital technology combined with experimental techniques.

KINE 457. Socially Engaged Media. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. A multimedia studio course involving the creation of diverse artworks in a social, political and public context. Students engage in weekly projects, both independent and collaborative, along with presentations, discussions and ongoing blog entries.

KINE 458. Virtual Interactive Worlds. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: KINE 348 or permission of instructor. A transdisciplinary course exploring critical game concepts, virtual environment aesthetics, interactivity and extended reality in a team project setting.

KINE 460. Wearable Technologies. 4 Hours.

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: KINE 354. An exploration of digital technologies on and interfacing with the body. Skills from physical computing and maker culture will be utilized to create innovative wearable designs. Topics include sensing, haptics, biofeedback and 3D printing.

KINE 474. Research and Production I. 4 Hours.

Semester course; 8 studio hours. 4 credits. Critical analysis and development of a culminating project with emphasis on research, experimentation and conceptual development.

KINE 475. Research and Production II. 4 Hours.

Semester course; 8 studio hours. 4 credits. Prerequisite: KINE 474. Critical analysis and development of a culminating project with emphasis on implementation, execution and presentation.

KINE 491. Studio Topics. 1-4 Hours.

Semester course; variable credit (1 lecture and 2 studio hours per credit). 1-4 credits. May be repeated for a total of 12 credits. Topical studio focusing on research and experimentation in specialized visual communication media.

KINE 492. Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Prerequisite: permission of the chair. Open to kinetic imaging majors only. Creative learning experiences in the professional realm under the direction and supervision of qualified practitioners.

Music (MUSC)**MUSC 110. Music Notation Software. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: MHIS 145. Enrollment is restricted to VCU music majors and minors. This course focuses on principles and techniques of music notation using computer software.

MUSC 200. Introduction to Composition. 2 Hours.

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisites: MHIS 146, MUSC 110 and APPM 174. Enrollment is restricted to VCU music majors and minors. This course is designed to provide students with an introduction to the compositional process as well as the basics of instrumentation and orchestration. In collaboration with the instructor, students are guided through exercises and lessons designed to hone their compositional craft.

MUSC 210. Digital Music Production. 3 Hours.

Semester course; 2 lecture and 1 laboratory hours. 3 credits. This course will cover contemporary music production techniques applied to music creation using digital audio workstations. Students will learn about virtual instruments, loops, recording and manipulating audio and MIDI, signal processing, plug-ins, and mixing in a DAW environment. It is highly recommended that students have a basic understanding of music principles and concepts similar to those presented in MHIS 115; however, MHIS 115 is not a prerequisite for this class.

MUSC 220. Orchestration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MHIS 245 and MUSC 110. Enrollment is restricted to VCU music majors and minors or by permission of the instructor. This course focuses on the techniques of combining different instruments for effect and mood. Students will learn the characteristics of various instruments and apply that knowledge to create a full score orchestration.

MUSC 300. MIDI Orchestration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MUSC 210 and MUSC 220. Enrollment is restricted to VCU music majors and minors or by permission of the instructor. This course focuses on advanced techniques in creating realistic orchestral mockups with high-quality industry-standard virtual instruments. Course work includes creating mockups of classical scores and modern film scores, as well as scores of the student's own composition and/or choice. Particular emphasis is placed on technical considerations as they apply to MIDI programming, sample selection and mixing.

MUSC 340. Film and Media Scoring. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MUSC 300 and MUSC 310. Enrollment is restricted to VCU music majors and minors or by permission of the instructor. Project-based course designed to provide students the opportunity to compose and realize a varied array of music for motion picture including film, television and ads. Aesthetics and psychology of mood music, sound-film synchronization, timing techniques and scoring procedures will be covered, and practical methods of scoring will be demonstrated. Analysis and performance of student projects is included.

MUSC 406. Orchestration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. No degree credit for graduate composition majors. Prerequisite: MHIS 245. Application of idiomatic scoring devices for orchestral instruments and voices in both large and small combinations.

Music Education (MUED)**MUED 230. Psychology of Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Survey course of the literature in psychology of music with applications to music teaching, learning and performing, as well as its therapeutic uses in clinical and educational settings.

MUED 260. Introduction to Music Therapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Provide a historical, theoretical and clinical basis for defining and understanding music therapy. As a survey course to give historical background to the development of the profession, as well as basic understanding of techniques and populations now served by music therapists.

MUED 274. Functional Keyboarding for the Music Classroom. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 273. Enrollment is restricted to VCU music education majors. The focus of this course is the development of essential keyboard competencies needed to effectively teach and guide individual musical growth of students in elementary and secondary choral music classrooms. Emphasis will be placed on developing the competencies and skills needed to employ effective pedagogical techniques for choral teaching in beginning and intermediate instruction in the public schools. Students will be asked to demonstrate teaching skills that use keyboard support to effectively teach the Virginia Standards of Learning in music.

MUED 301. Methods and Techniques: Guitar. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of basic performance competencies and teaching knowledge on the guitar including chording, single-string technique, plectrum and finger styles.

MUED 302. Methods and Techniques: Voice. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies in voice including vocal production, diction and solo and group performance.

MUED 303. Methods and Techniques: Woodwinds. 1 Hour.

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisite: completion of MUED 303 to enroll in MUED 304. For music education majors only. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon and saxophone.

MUED 304. Methods and Techniques: Woodwinds. 1 Hour.

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisite: completion of MUED 303 to enroll in MUED 304. For music education majors only. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon and saxophone.

MUED 305. Methods and Techniques: Brass. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on trumpet, baritone, tuba, trombone and French horn.

MUED 306. Methods and Techniques: Strings. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on violin, viola, cello or bass.

MUED 307. Methods and Techniques: Percussion. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on snare drum. Introduction to basic techniques of other percussion instruments.

MUED 350. Music and Social Justice. 3 Hours.

Semester course; 1.5 lecture and 1.5 field experience hours. 3 credits. This course will introduce students to social justice issues in a local context with a focus on expanding and deepening their knowledge and skills to effect change through active engagement in the community. The course will comprise a 75-minute weekly lecture on VCU's campus and performances in conjunction with the RVA Street Singers. This course will promote an understanding and critical analysis of factors which impact those experiencing homelessness. Guest lecturers will present on such topics as diverse populations, mental health, chronic illness, food insecurity, housing instability and other social justice issues. The rehearsals with RVA Street Singers will promote skillful physical activities, musical development, mental engagement and aesthetic sensitivity to benefit personal well-being. Students from various disciplines across the university will exchange skill sets, work together to develop their cultural sensitivity with specific insights to the homeless population, interact with and provide support for the RVA Street Singers, and come to understand the effect of community singing in a highly diverse adult population.

MUED 380. Introduction to Music Education. 2 Hours.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Enrollment is restricted to students admitted to music education candidacy by the Department of Music. An introduction to the profession of music education. Emphasis on the study of the historical development of music education in the U.S. along with current thinking, trends, practices and approaches in the profession, and the formation of a personal philosophy of music education. Substantial practicum experience is a fundamental aspect of this course.

MUED 381. Methods and Practicum in Elementary Music Education. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MUED 380. Study of current methods and materials of music education at the elementary level. Orff, Dalcroze, Kodaly, Gordon and other current music education approaches for the young child will be discussed, observed and demonstrated. An intensive directed practicum is a fundamental aspect of this course.

MUED 382. Secondary Methods/Practicum and Rehearsal Techniques. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: APPM 381, MUED 274, MUED 381 and a passing score on the Virginia Communication and Literacy Assessment. Development of the varied skills required to successfully administer a secondary music education program. Emphasis on understanding program structure, development and methodologies; and development of conducting technique, rehearsal strategies and selecting/arranging literature appropriate for musical growth of students.

MUED 384. Marching Band Techniques. 2 Hours.

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisite: MUED 380. Discussion of marching band techniques that address the different components of preparation, rehearsal and presentation of events. The application of topics and discussions are presented with marching band choreography using computer software simulation.

MUED 385. Music Education Technology and Arranging. 2 Hours.

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisite: MUED 380. Basic understanding of current technology in the field of music education. Specific skills developed for arranging school-aged ensembles with CAI, sequencing, productivity software and basic sound reinforcement will be the primary focus.

MUED 483. Special Workshop in Music Education. 0.5-3 Hours.

Semester course; 0.5-3 credits. Flexible semester courses on selected aspects of music education. See the Schedule of Classes for specific topics to be offered each semester.

MUED 485. Music Education Student Teaching I: Elementary. 6 Hours.

Semester course; 6 field experience hours. 6 credits. Prerequisites: MUED 382, APPL 416 and a passing score on the Praxis II Music Content Knowledge. Corequisite: MUED 486. Enrollment is restricted to students with a 3.0 overall GPA. The culminating field experience for music education students. An eight-week directed internship at the elementary general music education level. This course and its corequisite provide sequential experience and responsibilities for planning and instruction of music education for children in the P-12 setting.

MUED 486. Music Education Student Teaching II: Secondary. 6 Hours.

Semester course; 6 field experience hours. 6 credits. Prerequisites: MUED 382, APPL 416 and a passing score on the Praxis II Music Content Knowledge. Corequisite: MUED 485. Enrollment is restricted to students with a 3.0 overall GPA. The culminating field experience for music education students. An eight-week directed internship at the secondary instrumental or choral music education level. This course and its corequisite provide sequential experience and responsibilities for planning and instruction of music education for children in the P-12 setting.

Music History, Literature and Theory (MHIS)**MHIS 110. Elements of Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. No degree credit for music majors. A study of music notation, scale and triad forms. Aural skill development will parallel the theoretical studies. Intended to prepare music majors for core curriculum study.

MHIS 115. Fundamental Musicianship. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to music majors, music minors and students pursuing a concentration or minor in musical theatre. Study of fundamental written music notation, tone (harmonic series, timbre, instruments in the orchestra) and structure. Aural skill development parallels theoretical studies for integrated learning of notation and sound.

MHIS 120. Music in Culture. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to students majoring or minoring in music. This class focuses on studying music within its own cultural context, and will explore the countless ways that music can sound, look and be meaningful. Much of the music in the world looks and sounds very different from music typically studied in U.S. university programs. This music often involves different instruments, scales, rhythms, ways of participating and ways of thinking.

MHIS 145. Theory and Aural Skills I. 4 Hours.

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Open to music majors and minors only. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Activity begins with rudiments and progresses to diatonic harmony. Emphasis is placed upon the development of aural skills as applied to the presented material.

MHIS 146. Theory and Aural Skills II. 4 Hours.

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisite: MHIS 145. Open to music majors and minors only. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Activity begins with harmonic voicing and progresses to secondary harmony as applied to phrase structure in music. Emphasis is placed upon the development of aural skills as applied to the presented material.

MHIS 147. Jazz Theory and Aural Skills. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 145. Theoretical and aural recognition of established melodic, harmonic and rhythmic traditions within jazz so as to apply successfully to creative performance-practice and composition-arranging pursuits.

MHIS 243. Music Appreciation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Not open to music majors. Designed to encourage understanding of music from selected periods. Development of active cognitive listening skills through guided listening to selected recorded music.

MHIS 244. Experiencing Music. 3 Hours.

Semester course; 1 lecture and 2 laboratory hours. 3 credits. Designed for the purpose of developing familiarity with the elements of music that are part of a successful performance and listening experience. Weekly attendance at both VCU and external events is part of the criteria to develop students' awareness of the creative process in shaping a musical performance.

MHIS 245. Theory and Aural Skills III. 4 Hours.

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisites: MHIS 146. Open to music majors. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Second year studies continue with chromatic harmony and modulations. Emphasis is placed upon the development of aural skills as applied to the presented material.

MHIS 246. Theory and Aural Skills IV. 4 Hours.

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisites: MHIS 245. Open to music majors. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Final semester of study continues with chromatic harmony and concludes with modern techniques as applied to form in music. Elements of popular styles and jazz are incorporated as appropriate. Emphasis is placed upon the development of aural skills as applied to the presented material.

MHIS 251. American Popular Music. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A music course with a full survey of American popular music as its subject matter. The primary objectives for students in this class are to gain comprehensive knowledge of American popular music from the 19th, 20th and 21st centuries, distinguish related musical styles that influenced the development of the genre and be able to properly recognize American popular musical styles aurally.

MHIS 252. Soundscapes. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This class will serve as an introduction to music from around the world. Students will learn to identify musical genres and their instruments. In addition to covering the musical characteristics of each geographical area students will take an ethnomusicological approach and explore the social, political and cultural context within which each genre is played.

MHIS 256. Musicianship Practicum. 2 Hours.

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisites: APPM 174 or APPM 374; and MHIS 245. Application of musical analysis, composition, keyboard and ear training in holistic and integrated assignments and projects. Group assignments will lead to development of self-directed project.

MHIS 291. Topics in Music. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of six credits. Flexible semester courses in selected aspects of music theory, literature or history. See the Schedule of Classes for specific topics to be offered.

MHIS 303. Piano Literature Through 1828. 2 Hours.

Semester course; 2 lecture hours. 2 credits. A survey of stringed keyboard literature. Historical, formal and stylistic considerations of the various periods and composers of keyboard music from 1600-1828 (Baroque and Classical eras). Listening and reading assignments included.

MHIS 304. Piano Literature Since 1828. 2 Hours.

Semester course; 2 lecture hours. 2 credits. A survey of stringed keyboard literature. Historical, formal and stylistic considerations of the various periods and composers of keyboard music from 1828 to the present (Romantic, 20th century, Modern eras). Listening and reading assignments included.

MHIS 305. Form and Analysis I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 245. An analytical study of musical forms and salient features of melody, harmony, rhythm and timbre of late Baroque, Classical, early and late Romantic compositions.

MHIS 306. Form and Analysis II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 245. Study of traditional and new approaches to form in the music of the 20th century. Examination of post-tonal harmony as a determinant of form, formal aspects of motivicism, contour, rhythm, register, timbre and texture.

MHIS 307. The Physics of Sound and Music. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: A 100- or 200-level physics course or equivalent and the ability to read music or sing or play a musical instrument, or permission of instructor. Basics of the physics of waves and sound. Fourier synthesis, tone quality, human ear and voice, musical temperament and pitch, physics of musical instruments, electronic synthesizers, sound recording and reproduction, room and auditorium acoustics. Not applicable toward the physics major. Crosslisted as: PHYS 307.

MHIS 311. Jazz Arranging I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MHIS 245 and APPM 272, or permission of instructor. A study of the basic harmonic, melodic, notational and orchestration techniques needed to draft a successful jazz arrangement. The final project will be to write an arrangement for a 12-piece jazz ensemble.

MHIS 312. Jazz Arranging II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 311. Advanced harmonic, melodic and orchestration techniques applied to writing for the small jazz ensemble, vocal group and large jazz orchestra.

MHIS 321. Classical Music Survey I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: UNIV 200 or HONR 200. A study of classical music from antiquity through the Classical Era. Students will learn correlations between musical works, composers and the cultures/societies in which the works were composed. Students will read about, listen to, review and write about a diverse and inclusive variety of works by a similarly diverse and inclusive pool of compositional and performing artists, including under-represented artists of African descent and figures in the LGBTQ+ community. Students will learn a diverse array of musical terminology including, but not limited to, genres, terms, forms and directives, and will discover ways to apply such terminology in their current music-making activities.

MHIS 322. Classical Music Survey II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: UNIV 200 or HONR 200. A study of classical music from the Romantic Era through present day. Students will learn correlations between musical works, composers and the cultures/societies in which the works were composed. Students will read about, listen to, review and write about a diverse and inclusive variety of works by a similarly diverse and inclusive pool of compositional and performing artists, including under-represented artists of African descent and figures in the LGBTQ+ community. Students will learn a diverse array of musical terminology including, but not limited to, genres, terms, forms and directives, and will discover ways to apply such terminology in their current music-making activities.

MHIS 324. Jazz History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 120. Study of jazz in a historical context from pre-jazz roots to contemporary styles.

MHIS 350. Studies in the Music of the African Continent and Diaspora. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: AFAM 350/INTL 370.

MHIS 373. Beethoven and Brahms Symphonies. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 305. An overview of all symphonies will be the basis for an in-depth analysis of selected movements.

MHIS 380. Survey of the Music Industry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Topics include copyright, business organization, music production, management, recording, freelancing, grants, taxation and careers allied with music.

MHIS 392. Independent Study. 1-6 Hours.

Semester courses; variable hours. 1-6 credits per semester. Maximum total of 6 credits. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student.

MHIS 405. Jazz Form and Analysis I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 312. Arranging and performance-practice techniques across selected jazz styles.

MHIS 422. The History of the Symphony. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected symphonies from the 17th, 18th, 19th and 20th centuries.

MHIS 424. History of American Musical Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected musical theatre productions from the 19th, 20th and 21st centuries.

MHIS 465. History of the Art Song. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to music majors and music minors. A survey of western classical art song repertoire from 1760-1950 with emphasis on German lieder, French melodies (diacritical accent), and Spanish, British and American songs. A diverse array of composers from the following style periods will be studied: Rococo, Classical, Romantic, Post-Romantic, Impressionism, atonality and serialism, and other 20th-century styles.

MHIS 476. Duke Ellington. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An overview of the music of Duke Ellington. Lectures and presentations on Ellington recordings, writings and sources of his influences will serve as content for overview.

MHIS 491. Topics in Music. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of nine credits. Flexible semester courses in selected aspects of music theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

MHIS 492. Independent Study. 1-6 Hours.

Semester courses; variable hours. 1-6 credits per semester. Maximum total of 6 credits. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student.

Painting and Printmaking (PAPR)**PAPR 201. Painting From Observation. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Introduction to the materials of oil and/or acrylic paint through a practice of painting from observation. Students will practice fundamental concepts in the medium and gain understanding of the context of contemporary and historic painting.

PAPR 206. Drawing for Nonmajors. 3 Hours.

Semester course; 6 studio hours. 3 credits. Enrollment is restricted to non-art majors; students may not be enrolled in the School of the Arts. An introduction to the tools and methods of drawing. Emphasis will be placed on drawing from observation with a focus on compositional organization and the use of traditional drawing materials.

PAPR 210. Painting for Non-majors. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Open to non-art majors only. The course will offer an opportunity for students to work with some of the ideas and materials of painting through lecture and studio involvement.

PAPR 211. Print Media I. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Designed for students beginning to explore the development of their visual vocabulary utilizing the multiple. This course is meant to be taken as part of a year-long module including etching, lithography, screen printing and digital imaging.

PAPR 212. Print Techniques: Etching. 2 Hours.

Semester course; 6 studio hours. 2 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in School of the Arts. A seven-week course that engages students with one of the earliest means for creating a multiple -- the incised plate. A variety of procedures for crafting the copper plate such as etching, drypoint and aquatint will be introduced. The ability to print and discern a quality impression will be developed. What connects printmaking's various techniques is the initial production of a matrix from which the image is transferred to another surface and potentially reproduced multiple times. This course is one of a four-part series of printmaking studio courses designed for students beginning to explore the development of their visual vocabulary utilizing the multiple.

PAPR 213. Print Techniques: Screenprint. 2 Hours.

Semester course; 6 studio hours. 2 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in the School of the Arts. A seven-week course that is structured to provide an understanding of the history, techniques, materials and contemporary practice of screenprinting in a fine arts context. Both analog and digital techniques for creating stencils on screens will be introduced. The ability to recognize technical quality and analyze content in a printed image will be fostered through group discussions and individual tutorials. Safe studio practices will be emphasized. This course is one of a four-part series of printmaking studio courses designed for students beginning to explore the development of their visual vocabulary by utilizing the multiple.

PAPR 215. Printmaking for Nonmajors. 3 Hours.

Semester course; 6 studio hours. 3 credits. Enrollment is restricted to non-art majors; students may not be enrolled in the School of the Arts. The course will offer an opportunity for students to work with some of the ideas and materials of printmaking through lecture, studio practice, technical demonstrations and individual and group critiques.

PAPR 231. Drawing from Observation. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. This course continues the development of students' proficiencies in drawing through an emphasis on representation, illusion and mimesis. Students will gain an understanding of fundamental concepts in drawing, including figure/ground relationships, planes and volumes, and formal and expressive approaches to mark-making.

PAPR 290. Concepts and Issues. 2 Hours.

Semester course; 2 lecture hours. 2 credits. A lecture course that familiarizes students with contemporary artworks, as well as modern and postmodern concepts. Students will be introduced to contemporary issues in art through the presentation of slides, films and visiting speakers. Visits to outside events and lectures will be required.

PAPR 292. Concepts and Issues II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PAPR 290 or SCPT 290. A lecture course that builds on the prerequisite and covers contemporary art from recent decades. Students will be introduced to issues in contemporary art, including recent debates in the field. Crosslisted as: SCPT 292.

PAPR 301. Painting Strategies. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 201. Enrollment is restricted to students in the School of the Arts. This course will explore contemporary ideas in painting through studio practice, critique, lecture, reading and discussion. Students will be exposed to relevant contemporary theory and will pursue issues such as abstraction, installation, site specificity and process, as well as systemic and conceptual approaches to painting.

PAPR 304. Paint Practice and Theory. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 301. This course utilizes the group critique as its principle teaching methodology and explores critical issues in the field of painting. Each student will pursue a studio practice, complete assigned reading and participate in discussion.

PAPR 306. Print Techniques: Lithography. 2 Hours.

Semester course; 6 studio hours. 2 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in the School of the Arts. A seven-week course that is structured to provide an understanding of basic techniques for printing from polyester and aluminum plates. Instruction will be provided on plate preparation, drawing materials, chemical stabilization of the drawn plate, press set-up, proofing, paper selection, and printing and signing an edition. The ability to recognize technical quality and analyze content in a printed image will be fostered through group discussions. Safe studio practices will be emphasized. This course is one of a four-part series of printmaking studio courses designed for students beginning to explore the development of their visual vocabulary utilizing the multiple.

PAPR 307. Print Techniques: Digital. 2 Hours.

Semester course; 6 studio hours. 2 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in the School of the Arts. A seven-week course that investigates the history of digital printing and imparts an understanding of what it means to have a digital studio practice. While expanding the notion of print's history of dissemination to the virtual, students will develop a working knowledge of image-editing software, image acquisition methods, digital file maintenance and color management. This course is one of a four-part series of printmaking studio courses designed for students beginning to explore the development of their visual vocabulary utilizing the multiple.

PAPR 308. Programming for Artists. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in the School of the Arts. Explores computer programming and computational thinking using processing language, enabling artists to create their own software rather than being the user of someone else's tool/idea. Students will learn the basic foundations of the computer programming environment through lectures, projects, critiques and quizzes.

PAPR 309. Electronic Strategies. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. A digital media course designed to acclimatize students with the use of computers in the context of fine art. As opposed to common perceptions of "computer art," students will learn to use the computer as they would any other tool -- to articulate their ideas and add to their artistic practice. Through in-class exercises and homework assignments emphasizing problem-solving, students will learn to express their ideas through this emerging medium.

PAPR 311. Print Media II. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Further studies for students exploring the development of their visual vocabulary utilizing the multiple. This course is meant to be taken as part of a year-long module including etching, lithography, screen printing and digital imaging.

PAPR 314. Print Practice and Theory. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisites: PAPR 212 or PAPR 213; and PAPR 306 or PAPR 307. This course utilizes the group critique as its principle teaching methodology. It builds advanced printmaking skill and is a seminar on critical issues in the field. Each student will pursue a studio practice, complete assigned reading and participate in discussion.

PAPR 315. Printmaking, Intermediate (Etching). 4 Hours.

Semester course; 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 212 or permission of instructor. Investigation of etching printmaking, drypoint, engraving, aquatint, soft grounds and related techniques.

PAPR 317. Printmaking, Intermediate (Lithography). 4 Hours.

Semester course; 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 306 or permission of instructor. Investigation of techniques and technical printing problems in lithographic printing process from stones and plates.

PAPR 319. Printmaking, Intermediate (Screenprinting). 4 Hours.

Semester course; 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 213 or permission of instructor. An investigation of cut, hand-drawn and photographic stencil techniques and printing on a variety of surfaces.

PAPR 326. Color. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 201. Enrollment is restricted to students in the School of the Arts. A course examining the concepts governing the use of color. Historical and contemporary concepts and methods of application will be explored.

PAPR 330. Figure Painting. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 201. Enrollment is restricted to students in the School of the Arts. Designed to allow advanced painting students to focus on figurative work in painting. Historical and contemporary figurative painters will be examined in the context of developing each student's individual approach to form and content.

PAPR 331. Experiments in Drawing. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 231. Lecture, studio practice and historical context. Students will practice exploratory notions of drawing and be provided with relevant examples of contemporary approaches to drawing.

PAPR 390. Junior Seminar. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PAPR 290. Enrollment is restricted to painting and printmaking majors or requires permission of the instructor. This course introduces students to the basic concepts and skills necessary to participate as a professional in the field of contemporary art.

PAPR 392. Independent Study in Painting and Printmaking. 1-4 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: junior standing as a major in painting and printmaking and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

PAPR 401. Painting Investigations. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 304. May be repeated for a maximum of eight credits. Enrollment is restricted to students in the School of the Arts. With the emphasis on the exploration of an individual direction, this course continues the development of a student's technical and conceptual proficiencies in the context of contemporary painting practices.

PAPR 402. Senior Degree Project. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 304 or PAPR 314. In this course the student will pursue an independent studio practice toward the development of a personal and informed body of advanced work.

PAPR 408. Senior Degree Project II. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 402. Enrollment is restricted to painting and printmaking majors. This course builds on the prerequisite course to allow students to continue their independent studio practice toward the development of a personal and informed body of advanced work.

PAPR 409. Large Format Digital Printing. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Enrollment is restricted to students in the School of the Arts. Engages students in the use of digital tools in printmaking. Students will investigate developments in digital culture in relation to print's history and future. Creative applications of digital tools, with an emphasis on the digital print, form the heart of this course.

PAPR 415. Printmaking, Advanced (Etching). 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Specialization in one medium with emphasis upon technical research and aesthetic suitability of the design to the particular medium used.

PAPR 417. Printmaking, Advanced (Lithography). 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Further investigation of techniques and technical printing problems in the lithographic printing process from stones and plates.

PAPR 419. Printmaking, Advanced (Screenprinting). 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Further exploration of cut, hand-drawn and photographic stencil techniques and printing on a variety of surfaces.

PAPR 421. Drawing, Advanced. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisite: PAPR 331. Enrollment is restricted to students in the School of the Arts. A studio for drawing with individual criticism. Special attention is given to contemporary concepts.

PAPR 423. Experimental Printmaking. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisites: 3 credits of intermediate printmaking or permission of instructor. Relief printing, collographs, monoprints, photoengraving and mixed media will be investigated.

PAPR 431. Drawing and the Model. 4 Hours.

Semester course; 6 studio hours. 4 credits. Prerequisites: PAPR 231. Historical and contemporary figure drawing will be explored with an emphasis on developing the student's individual approach to the figure.

PAPR 480. Critical Issues. 4 Hours.

Semester course; 3 lecture and 2 studio hours. 4 credits. Prerequisites: ARTF 131, 132, 133 and 134. Enrollment is restricted to students with junior or senior standing in the School of the Arts. This advanced course comprises two parts. The first examines diverse critical and aesthetic issues through the study of a select group of highly innovative international artists. In the second part, students will participate in studio visits. Crosslisted as: SCPT 480.

PAPR 490. Senior Seminar. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PAPR 390. Information to help graduating seniors in the department of painting and printmaking meet the professional requirements involved in exhibiting and promoting their creative work and in functioning as an artist. Writing intensive.

PAPR 491. Topics in Painting and Printmaking. 1-4 Hours.

Semester course; 1-4 credits. May be repeated with different topics for a maximum of 12 credits. Topical course focusing on creative expression and research in the areas of painting and printmaking. See the Schedule of Classes for specific topics to be offered.

PAPR 492. Independent Study in Painting and Printmaking. 1-4 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: senior status as a major in painting and printmaking and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

PAPR 493. Internship for Painting and Printmaking. 1-6 Hours.

Semester course; 1-6 practicum hours. 1-6 credits (40 work hours per credit). May be repeated for a maximum of 12 credits. Enrollment is restricted to juniors and seniors in School of the Arts with permission of the department chair. A practicum that provides students with valuable real-world experience to work in the field of contemporary art.

Photography and Film (PHTO)**PHTO 201. Sophomore Photography Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: sophomore standing in Department of Photography and Film. Introduces various methods and means of exhibition.

PHTO 202. Sophomore Film Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: sophomore standing in the Department of Photography and Film. Students will learn all aspects of organizing a film festival that will be held at the end of the spring semester.

PHTO 233. Elements of the Moving Image. 4 Hours.

Semester course; 4 lecture hours. 4 credits. A survey of new media and their origins. An exploration of this visual phenomena and its relationship to modern society.

PHTO 243. Darkroom. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: sophomore standing in the department. Manual 35mm film camera is required. Study of fundamental camera techniques and photographic processes including darkroom printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

PHTO 245. Design Photography I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. For communication art and design majors only or permission of instructor. A comprehensive beginning class covering an introduction to the camera, the process of exposure, developing, and black-and-white printmaking.

PHTO 260. Experiments in Sequencing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243 or PHTO 281. Explores the history, contexts and applications of sequencing as a unifying artistic practice. Emphasis is placed on sequencing as it relates to visual communication and contemporary multimedia.

PHTO 275. Film as Material. 3 Hours.

Semester course; 2 lecture and 3 studio hours. Prerequisite: sophomore standing in the department. Study of the fundamental techniques and processes of 16mm film production, including cameras, lighting and composition. Emphasizes technical proficiency and individual artistic expression.

PHTO 280. Moving Pixels. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: sophomore standing in the department. Introduction to digital video, computer imaging and interactive multimedia as tools of artistic expression and social inquiry.

PHTO 281. Digital Imaging I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. Prerequisite: sophomore standing in the department. Digital still image camera is required. Study of fundamental techniques and processes of digital image-making, including image capture, manipulation and digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

PHTO 289. Filmmaking for Non-majors. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Digital motion picture camera is required. Study of fundamental techniques and processes of digital filmmaking, including image and audio recording, editing and exporting digital media. Emphasizes media as a tool of artistic expression and social inquiry.

PHTO 290. Photography for Non-majors. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Digital still image camera is required. Study of fundamental techniques and processes of digital image-making, including image capture, manipulation and digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

PHTO 295. Revolutionary Cinema. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTO 280. Investigates a range of experimental/underground/alternative moving image art forms and styles and covers key historical moments in the avant-garde. Emphasizes attentive viewing and critical analysis of works that challenge dominant media conventions.

PHTO 301. Junior Seminar. 1 Hour.

Semester course; 1 studio hour. 1 credit. Prerequisite: junior standing in the Department of Photography and Film. Instruction in how to make an artist website using current technology and 2-D design principles.

PHTO 307. Processes and Techniques. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243. Explores alternative photographic techniques with an emphasis on handmade printing. Places various photographic practices and aesthetics in a historical context. Students develop personal awareness of their creative process in the pursuit of a conceptually coherent body of work.

PHTO 340. Lighting I: Studio. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 243 and PHTO 281. Introduces controlled lighting for still photography in the studio. Students use continuous light sources and professional grade strobe equipment to explore tabletop and portraiture photography through lectures and studio assignments. Emphasizes professional standards, technical proficiency and individual artistic expression.

PHTO 350. Concepts I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and PHTO 281. Students utilize the aesthetic and technical skills mastered in previous courses to explore photography as a conceptual tool. Emphasizes both historic and contemporary contextualizations of the medium and fosters development of a long-term, personal artistic project.

PHTO 351. Portrait Photography. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 345 Design Photography or PHTO 350 Intermediate Photography. Students explore the various visual possibilities of the use of portrait photography.

PHTO 352. Concepts II: Junior Project. 3 Hours.

Semester course; 2 lecture and 3 studio hours. Prerequisite: PHTO 350. Students complete a conceptually coherent body of work that engages with photography as an artistic medium. Course emphasizes advanced understanding of historical perspectives and critical theory as they relate to the development of a personal project.

PHTO 361. Sound and Color. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 280 and PHTO 281. Explores advanced concepts and techniques in sound design, editing, color grading and postproduction workflow for film, video and multimedia.

PHTO 362. Lighting and Cinematography. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 280. Explores theory and formal aspects of lighting, framing, composition, and camera function and movement for moving-image media in a range of genres. Students develop strategies for visual storytelling through hands-on workshops and exercises.

PHTO 377. The Film Image. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 9 credits. An examination of production techniques and problems encountered by the filmmaker in creating the motion picture image. A selected number of narrative, documentary, experimental and animated films are viewed as source material and dealt with from a production point of view. The films chosen for discussion vary from semester to semester.

PHTO 381. Digital Imaging II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 281. Digital still image camera is required. Study of advanced techniques and processes of digital image-making, including advanced manipulation and color control and advanced digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

PHTO 382. Advanced Digital Printing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 380 and 381. How to manage a digital color workflow in order to produce desired colors and tonal values in the final output – the print. Instruction in controlling image management, color calibration and printing through lectures, demonstration and hands-on experience. Discussion of student work in regular critiques.

PHTO 390. Writing and Directing for the Screen. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to majors in the School of the Arts. Explores basic theory and formal aspects of story, structure, performance and character through readings, workshops and writing exercises. Students develop skills specific to writing, preproducing, staging and directing a short fiction film.

PHTO 391. Topics in Photography and Film. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 6 credits. A lecture and/or studio course offered on a variety of photography or film issues. See the Schedule of Classes for specific topics covered each semester.

PHTO 392. Animation. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Explores various materials and processes, analog and digital, involved in creating animated moving image works. Emphasizes studio technique and artistic exploration.

PHTO 394. Documentary I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 280. Introduces strategies for developing, shooting and editing various types of documentary and nonfiction media including, but not limited to, the electronic essay, biography/portraiture, ethnographic film and new genres. Covers key historical moments and ethical issues related to the representation of the real world.

PHTO 420. Senior Thesis I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: senior standing in the department. Critical analysis and development of a yearlong creative thesis project with emphasis on the completion of a conceptually coherent body of work. Course emphasizes professional standards, technical proficiency and individual artistic expression informed by historical perspectives and critical theory.

PHTO 421. Senior Thesis II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 420. Critical analysis and development of a yearlong creative thesis project with emphasis on the completion of a conceptually coherent body of work. Course emphasizes professional standards, technical mastery and individual artistic expression informed by historical perspectives and theory. This course is a capstone experience integrating effective oral, written and visual communication, critical thinking and advanced studio techniques.

PHTO 435. Professional Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines a range of business models, practices and tools applicable to building a career in photography and related artistic, commercial and media fields. Emphasizes practical skills, marketing, legal and ethical issues.

PHTO 436. Senior Suitcase. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines a range of professional practices and tools applicable to building a career in the media arts. Students develop ancillary materials related to their overall student film portfolio. Emphasizes practical skills, marketing and audience-engagement issues.

PHTO 442. Lighting II: Location. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 340. Explores photography using lighting design on location. Students concentrate on balancing and matching available lighting with electronic flash and continuous lighting tools. Emphasis is on the technical, professional and logistical skills required of a photographer working on location assignments and on using creative approaches to lighting and image design.

PHTO 474. Contemporary Critical Perspectives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTO 352. Explores and interrogates multiple theories of representation and the aesthetic, ideological, ethical and cultural issues raised by contemporary photography and related media. Students will view work, read contemporary criticism, engage in discussion and produce original, critical writing.

PHTO 475. Advanced Production Workshop. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 390. A practical, intensive workshop in which students work collaboratively in standard industry crew positions to complete a single project. Students explore craft, aesthetics, storytelling and production issues at an advanced level.

PHTO 484. Thesis Film I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 475. Students complete writing, previsualization, preproduction and initial production on their thesis films. Students engage in workshops, screenings and critiques in order to further develop their professional identities and to advance their understanding of the methods and tools deployed by independent film and media artists.

PHTO 485. Thesis Film II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 484. Students complete all production, editing, sound design and outreach materials for their thesis films. Students engage in workshops, screenings and critiques in order to further develop their professional identities and to advance their understanding of the methods and tools deployed by independent film and media artists. This course is a capstone experience integrating effective oral, written and visual communication, critical thinking and advanced studio techniques.

PHTO 491. Topics in Photography and Film. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 12 credits. A seminar or workshop that intensively engages photography, film and related-media subjects, including, but not limited to, a range of historical and contemporary photographic/cinematic practices, trends, theories and concerns within a wider artistic and art historical context. See the Schedule of Classes for specific topics covered each semester.

PHTO 492. Independent Study in Photography and Film. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior or senior standing as a major in photography and film, and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

PHTO 493. Teaching Practicum in Photography and Film. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Repeatable for a maximum of 6 credits. Prerequisites: senior standing in the department and a minimum GPA of 3.0. Advanced students in photography and film are mentored in the classroom while serving as teaching apprentices. Specific duties are negotiated between the student and the mentor and approved by the department chair. Duties will typically include regular classroom attendance, peer tutoring and assistance in technical demonstrations of equipment and/or software.

PHTO 494. Documentary II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 394. Students will explore advanced concepts and techniques in documentary and nonfiction media creation through in-class exercises, screenings, independent productions and group critiques.

PHTO 495. Photography and Film Internship. 1-6 Hours.

Semester course; 1-6 practicum hours. 1-6 credits (30-40 work hours per credit). May be repeated for a maximum of nine credits. Enrollment is restricted to students with consent of the internship supervisor and academic adviser. Practical work experiences are coordinated with professionals in the field of photography, film and various arts disciplines. A grade of PR will be assigned for an internship that extends past the grading period.

Sculpture and Extended Media (SCPT)**SCPT 209. Introduction to Sculpture. 3 Hours.**

Semester courses; 2 lecture and 3 studio hours. 3, 3 credits. Open to non-art majors only. The course will offer an opportunity for students to work with some of the ideas and materials of sculpture through slides, lecture and studio involvement.

SCPT 211. Basic Sculpture I. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. The primary goal of this course is the effective expression of ideas. The student is introduced to the basic tools, materials and techniques with attention given to problem-solving.

SCPT 212. Basic Sculpture II. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: SCPT 211. The primary goal of this course is the effective expression of ideas. The student uses advanced techniques that build upon the basic skills taught in Basic Sculpture I with attention given to problem-solving.

SCPT 215. Sophomore Seminar. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open only to sculpture majors. Designed for sophomore sculpture majors as a supplement to studio courses in the department. Emphasis is placed on articulating and expanding upon individual interests in relation to studio practices.

SCPT 290. Concepts and Issues. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: completion of Art Foundation. A lecture course that familiarizes students with contemporary artworks, as well as modern and postmodern concepts. This class presents contemporary issues in art through the presentation of media and visiting speakers. Visits to outside events and lectures will be required.

SCPT 292. Concepts and Issues II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PAPT 290 or SCPT 290. A lecture course that builds on the prerequisite and covers contemporary art from recent decades. Students will be introduced to issues in contemporary art, including recent debates in the field. Crosslisted as: PAPT 292.

SCPT 311. Intermediate Sculpture. 4 Hours.

Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: SCPT 212. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

SCPT 312. Intermediate Sculpture. 4 Hours.

Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: SCPT 212. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

SCPT 321. Figure Modeling. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: completion of Art Foundation. This course provides instruction in fundamental figure modeling skills working with clay and from live models.

SCPT 322. Flexible Molds. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: completion of Art Foundation. This course provides instruction on a variety of moldmaking techniques, including plaster and flexible moldmaking materials.

SCPT 323. Foundry. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: SCPT 322. This course provides instruction in bronze and aluminum metal casting using the lost wax process, ceramic shell.

SCPT 324. Robotics for Sculpture. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: completion of Art Foundation. This course provides instruction in the construction, programming and integration of microcontrollers in conjunction with the use of switches, motors and other devices.

SCPT 411. Advanced Sculpture. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 16 credits. Prerequisite: SCPT 311 or SCPT 312. The majority of the student's activities occur in the studio with emphasis on the development of a personal style.

SCPT 412. Advanced Sculpture. 4 Hours.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 16 credits. Prerequisite: SCPT 311 or SCPT 312. The majority of the student's activities occur in the studio with emphasis on the development of a personal style.

SCPT 415. Senior Seminar. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open only to sculpture majors. Designed for graduating sculpture students. Focus is on professional development and preparation for the possibility of graduate school.

SCPT 417. Seminar in Contemporary Sculpture. 4 Hours.

Semester course; 4 lecture hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: SCPT 212. A forum for consideration and discussion of recent developments.

SCPT 419. Professional Studio Practicum. 3 Hours.

Semester course; 9 studio hours. 3 credits. May be repeated for a total of 6 credits. Enrollment requires permission of departmental chair. A studio class that provides a continuation of the student's work in sculpture. This course will be recorded as an elective for a sculpture major.

SCPT 480. Critical Issues. 4 Hours.

Semester course; 3 lecture and 2 studio hours. 4 credits. Prerequisites: ARTF 131, 132, 133 and 134. Enrollment is restricted to students with junior or senior standing in the School of the Arts. This advanced course comprises two parts. The first examines diverse critical and aesthetic issues through the study of a select group of highly innovative international artists. In the second part, students will participate in studio visits. Crosslisted as: PAPP 480.

SCPT 491. Topics in Sculpture. 1-4 Hours.

Semester course; 1-4 credits. May be repeated for a maximum of 16 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of sculpture. See the Schedule of Classes for specific topics to be offered each semester.

SCPT 492. Independent Study in Sculpture. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits. Prerequisites: senior standing as a major in sculpture and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

SCPT 493. Sculpture Internship. 1-6 Hours.

Semester course; 40 contact hours per credit. 1-6 credits. May be repeated for a maximum of 12 credits. Prerequisite: SCPT 311 or SCPT 312. Open to junior- and senior-level sculpture majors only. A practicum in which students work with professionals in the field.

Speech (SPCH)**SPCH 121. Effective Speech. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Structured speaking and critical listening experiences within the basic forms of speech communication: interpersonal, small group and public. Students may receive credit toward graduation for only one of SPCH 121, SPCH 321 or BUSN 225.

SPCH 221. Oral Communication and Presentation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The study of oral communication across various mediums and best practices for effectively presenting to diverse groups and in diverse situations.

SPCH 321. Speech for Business and the Professions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Theory and practice in the oral communication process. Organization and presentation of informative and persuasive subject matter in professional contexts related to the student's major area of interest. Students may receive credit toward graduation for only one of SPCH 121, SPCH 321 or BUSN 225.

Theatre (THEA)**THEA 100. Technical Production. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to theatre majors. A crew assignment for a Mainstage production fulfilling all required work and hours of production calls.

THEA 102. Introduction to Technical Theatre. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. This course is designed as an introduction to technical theatre for performers. Skills learned in this class will allow the student to become a contributing team member as well as prepare the student for future endeavors requiring basic knowledge of technical theatre. Theatre students enrolled in design/technical production concentrations cannot receive credit for this course.

THEA 103. Stagecraft. 3 Hours.

Semester course; 9 studio hours. 3 credits. Restricted to theatre majors. The fundamental methods, materials and techniques of set construction for the stage. Participation in departmental productions.

THEA 104. Costume Construction. 3 Hours.

Semester course; 9 studio hours. 3 credits. Restricted to theatre majors. The fundamental methods, materials and techniques of costume construction for the stage. Participation in departmental productions.

THEA 105. Advanced Costume Construction. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 104. Focuses on the development of skills needed to function as a stitcher in a theatrical costume shop through practical application of techniques and processes.

THEA 107. Introduction to Stage Performance. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. For non-theatre majors. A survey and application of the basic elements in stage performing; acting, scene study, voice and movement.

THEA 108. Introduction to Stage Performance. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. For non-theatre majors. A survey and application of the basic elements in stage performing; acting, scene study, voice and movement.

THEA 110. Improvisation. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. This course provides students with foundational improv techniques. Students will learn how to apply these techniques to endeavors ranging from artistic to social and beyond.

THEA 111. Fundamentals of Performance. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Enrollment is restricted to theatre majors. Study of foundational acting technique including connections to breath, voice, physicality, ensemble, story and text.

THEA 112. Fundamentals of Theatrical Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to theatre majors. An introduction to the history of theatrical design and the importance of collaboration; elements and principles of design and composition, becoming visual storytellers, script analysis for designers, research, and the skills and tools needed as a designer.

THEA 113. Introduction to Acting I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. An introduction to and exploration of performance skills through theatre games, role-playing, improvisation and work on basic script units.

THEA 114. Introduction to Acting II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Study of the basic Stanislavski System and practicing toward competency of applying this system to monologue and scene study.

THEA 121. Introduction to Drawing. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open only to theatre majors. An introduction to drawing skills. Topics include line quality and contour, volume, value with shading and crosshatching, texture, space and composition, perspective, gesture, and figure drawing.

THEA 122. Color Theory. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open only to theatre majors. An introduction to color theory. Topics covered include how to create different values, hues and intensities, and how to mix color to best express a specific artistic intent.

THEA 161. Figure Drawing: Superficial Anatomy. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. Introductory course focused on developing drawings from direct observations of the figure. The specific problem will be the study of superficial anatomy as related to costume design. Various drawing and painting media will be explored.

THEA 162. Figure Drawing: Draping the Human Form. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. Focus on developing drawings from direct observations of the figure and folds, students will show the surface influence of superficial anatomy on the draped figure. Various drawing and painting media will be explored.

THEA 191. Topics in Theatre. 1-3 Hours.

Semester course; 1-3 workshop hours. 1-3 credits. May be repeated for a maximum of 6 credits. Enrollment restricted to theatre majors. Flexible semester course in selected aspects of performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

THEA 200. Broadway Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. The course will provide a weekly opportunity to work with various guests providing unique training opportunities in singing, dancing and acting. Topics will include audition technique and will introduce current Broadway trends to those interested in musical theatre.

THEA 201. Voice and Speech for the Actor I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. A study of the basic elements of voice and speech for actors.

THEA 202. Voice and Speech for the Actor II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Continuing study elements of voice and speech and practicing toward competency of applying these skills to text.

THEA 203. Movement for the Actor I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Practice and study of stage movement for the purpose of creating truthful physical behavior in the theatre.

THEA 204. Movement for the Actor II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Continuing study of creating truthful physical behavior in the theatre, leading toward competency of applying same to characters and text.

THEA 209. Theatrical Rigging. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: THEA 103. Enrollment is restricted to theatre majors. The course will provide a practical introduction to standards and techniques of safe theatrical rigging with an emphasis on safe rigging procedures, load calculations and current industry standards.

THEA 210. Introduction to Stage Combat. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Enrollment is restricted to theatre majors upon completion of satisfactory audition. An introduction to the techniques and performance of unarmed and armed stage combat sequences for the stage.

THEA 211. Introduction to Drama. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analysis and critical examination of plays for methods of interpretation and production qualities.

THEA 212. Introduction to Drama II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Analysis and critical examination of plays for methods of interpretation and production qualities.

THEA 213. Acting I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Exploration of the Stanislavski System with particular emphasis on emotional availability, point of view and personalization techniques.

THEA 214. Acting II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 213. Enrollment is restricted to theatre majors upon satisfactory audition. Introduction of heightened text with continuing study of point-of-view with personalization, emotional availability and practicing toward competency of basic acting skills.

THEA 215. Live Theatre Now. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to theatre as an art form and live theatrical event. The course is designed to cultivate an appreciation, understanding and critical perception of live theatre performance. Students will study the fundamentals of theatre and the theatrical production process.

THEA 216. Welding for Theatre. 1 Hour.

Semester course; 2 studio hours. 1 credit. Enrollment is restricted to theatre majors. This course is designed as a practical introduction to safe welding practices and standards.

THEA 217. Theatrical Drafting. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. An introduction to the practices and procedures used in communicating technical and design information among a range of theatre practitioners. Focus on traditional hand-drafting techniques.

THEA 218. Introduction to Scene Painting. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. An introduction to fundamental scene painting technique. Students will have the opportunity to study the materials and techniques of scene painting as well as the practices and expectations of a career in scenic artistry.

THEA 219. Fundamentals of Entertainment Technology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the physical science underlying various disciplines of technical theatre.

THEA 221. Introduction to Scene Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Restricted to theatre majors. An introduction to the theories, practices and procedures of designing for the stage.

THEA 223. Practicum in Theatre Technology. 3 Hours.

Semester courses; 9 studio hours. 3, 3 credits. Prerequisites: THEA 103 and THEA 104. Restricted to theatre majors. Advanced study in theatre technologies and the materials and methodologies of stage construction.

THEA 224. Practicum in Theatre Technology. 3 Hours.

Semester courses; 9 studio hours. 3, 3 credits. Prerequisites: THEA 103 and THEA 104. Restricted to theatre majors. Advanced study in theatre technologies and the materials and methodologies of stage construction.

THEA 225. Electricity for the Stage. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Restricted to theatre majors. A study of the properties and basic principles of electricity as they relate to the utilization of light on the stage. Participation in departmental productions.

THEA 226. Desktop Audio/Video. 2 Hours.

Semester course; 3 studio hours. 2 credits. A basic introduction to desktop audio and video production. Levels of production will be explored from the cheapest solutions to midrange solutions utilizing audio and video equipment working in tandem using nonlinear editors on the computer.

THEA 227. Introduction to Theatrical Makeup. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Teaches basic makeup practices for theatrical work. Students will gain an introductory knowledge of the physiological structure of the human face and how to alter appearance of an actor through the use of stage-makeup and basic prosthetic appliances. These skills will be evaluated through practical applications and studio work.

THEA 228. Introduction to Costume Design. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 227 or permission of instructor. Introduces students to the costume design process including: the techniques of drawing to aid in facilitating costume design, paperwork required of the costume designer, and costume sketching and painting techniques. Students will employ critical thinking in their evaluation of the costume design process and concurrently be introduced to the skills required in the design process through practical design projects.

THEA 229. Introduction to Lighting Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Restricted to theatre majors. A study of issues concerning the properties of light and electricity as they relate to theatre including design, composition and color.

THEA 230. Model Building. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. This course will provide students with an in-depth knowledge of basic model-making practices and strategies.

THEA 235. Beginning Stage Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the art and science of stage management with emphasis on the skills and mechanics necessary to successfully contribute to the theatrical production process.

THEA 237. Advanced Lighting I. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 229. An in-depth exploration into development and execution of a lighting design and the lighting potentials of a wide variety of facilities, production styles and lighting equipment. Includes work on development of communication skills with directors via value sketches and lighting plots. Work will include studies and design research, concepts, collaboration, professional procedures and systems, paperwork, and organization. Varies scales of theoretical and practical projects in the light lab.

THEA 251. Rehearsal and Performance I. 1-3 Hours.

Semester course; 2, 4 or 6 studio hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

THEA 261. Figure Drawing: Media and Technique. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. This course will explore various traditional wet and dry media techniques in depicting representational costume design. Assignments will incorporate applicable references to art history.

THEA 262. Figure Drawing: Advanced Media and Technique. 2 Hours.

Semester course; 1 lecture and 4 studio hours. 2 credits. Prerequisite: THEA 261. An advanced course investigating various traditional wet and dry media techniques depicting the human form and costuming. Assignments will incorporate applicable references to the history of art and contemporary developments.

THEA 291. Topics in Theatre. 1-3 Hours.

Semester course; 1-3 workshop hours. 1-3 credits. May be repeated for a maximum of 6 credits. Enrollment restricted to theatre majors. Flexible semester course in selected aspects of performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

THEA 292. Independent Study in Theatre. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: sophomore standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

THEA 301. Advanced Voice and Speech for the Actor I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 202. Open only to theatre majors upon satisfactory audition. Building upon lessons and skills practiced in the prerequisite course, an introduction to advanced elements of voice and speech and practicing toward competency of applying these skills to text.

THEA 302. Advanced Voice and Speech for the Actor II. 3 Hours.

Semester course; 3 studio hours. 3 credits. Prerequisite: THEA 301. Enrollment is restricted to theatre majors with a minimum 2.0 GPA in the major. Continuing study in advanced elements of voice and speech and practicing toward competency of applying these skills to text.

THEA 303. Black Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black theatre dramaturgy. Crosslisted as: AFAM 303.

THEA 305. Scenic Design Studio I. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 221. Enrollment is restricted to theatre majors. A study of the techniques and methods of scene design.

THEA 306. Scenic Design Studio II. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 221. Enrollment is restricted to theatre majors. Advanced study of the techniques and methods of scene design.

THEA 307. History of the Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to theatre majors. A study and analysis of the theatre history from Early Greece to the Renaissance: the architecture, the performer and performances, the stage, the production methods, and the audience.

THEA 308. History of the Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Enrollment is restricted to theatre majors. A study and analysis of theatre history from the Renaissance to the late 20th century: the architecture, the performer and performances, the stage, the production methods, and the audience.

THEA 309. History of Costumes. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

THEA 310. History of Costumes. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

THEA 311. Advanced Movement for the Actor I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of satisfactory audition. Advanced study of movement for the actor emphasizing physical control, flexibility and various physical performance techniques.

THEA 312. Advanced Movement for the Actor II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 311. Enrollment is restricted to theatre majors. Continuing practice of movement skills toward proficiency in creating truthful physical behavior in the theatre.

THEA 313. Actor's Studio I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of satisfactory audition. Scene study and exploration of personalized character work as it applies to modern acting.

THEA 314. Actor's Studio II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 313. Enrollment is restricted to theatre students who have successfully completed the sophomore assessment audition. Continuing exploration of personalized character work and heightened text as it applies to modern acting.

THEA 315. Audition Technique. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Enrollment is restricted to theatre majors with a minimum 2.5 GPA in the major upon satisfactory audition or with permission of instructor. Concentrated work using various techniques and methods of auditioning for the stage, television and film.

THEA 316. Musical Theatre History. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of musical theatre history from its beginnings in vaudeville to the golden age to contemporary musical theatre. Students will gain the necessary skills to do dramaturgical analysis of a musical, as well as historiographical skills and a strengthened understanding of how to write about performance both objectively and subjectively.

THEA 317. Musical Theatre Performance I. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of a satisfactory audition. Development of skills necessary to prepare songs and roles in musical theatre productions.

THEA 318. Musical Theatre Performance II. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 317. Open only to theatre majors upon completion of a satisfactory audition. Continuation of the development of skills necessary to prepare songs and roles in musical productions while also developing skills in audition technique and the building of a personal repertoire.

THEA 319. Musical Theatre Dance Styles: Landmark Choreographers. 2 Hours.

Semester course; 1 lecture and 1 studio hour. 2 credits. Development of skills necessary to dance and perform in theatre productions. Students will demonstrate an ability in dance basics. An advanced course focusing on the practical application and aesthetic of landmark choreographers of the modern musical theatre. Students will demonstrate and integrate ballet and jazz techniques and apply same to the proper execution of each choreographer.

THEA 320. Structural Design for the Stage. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to basic structural analysis as applies to theatrical scenic construction and rigging.

THEA 321. Costume Design Studio I. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 228. A studio course exploring the practice of the creative techniques, skill-building tools and business processes used according to the practical standards of the industry developed by professional union costume designers.

THEA 322. Costume Design Studio II. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 321. Continuing studio course exploring the practice of the creative techniques, skill-building tools and business processes used according to the practical standards of the industry developed by professional union costume designers.

THEA 323. Practicum in Advanced Theatre Technology. 3 Hours.

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Restricted to theatre majors. Advanced study in theatre technologies and technical management.

THEA 324. Practicum in Stage Lighting. 3 Hours.

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 12 credits. Restricted to theatre majors. Practical application in the methodologies of stage lighting.

THEA 325. Intermediate Stage Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 235. Continuing study in the art and science of professional stage management.

THEA 326. Audio Mixing. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum total of nine credits. Enrollment is restricted to theatre majors, those pursuing the sound design minor and others with permission of the instructor. A study of basic mixing theory and ear training to create a completed audio mix for live theatre or concerts.

THEA 327. Computer-assisted Design and Drafting for the Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Instruction and practice in the use of computer assisted design and drafting for the theatre such as preparation and presentation, perspective, rotation, development and graphic solutions pertaining to theatrical construction problems.

THEA 329. Patternmaking for the Theatre. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 105. This course introduces basic patternmaking skills including: sloper development, pattern manipulations employing flat patterning techniques, drafting, scaling and copying of historic garments. This course introduces critical-thinking skills as related to the form, fit and composition of clothing as it relates to the body. Students will apply these skills to practical projects that can relate to a variety of historical period costumes.

THEA 332. Draping for the Theatre. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 329. This course introduces basic draping skills including: sloper development, princess-line and bias garments, and clothing draped over extensive understructures. This course practices critical-thinking skills as related to the form, fit and composition of clothing as it relates to the body. Students will apply these skills to demonstrate specific historical period costumes.

THEA 333. Sound Technology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to theatre majors, those pursuing the sound design minor and others with permission of the instructor. This course will explore the concepts between sound, acoustics and our hearing, introducing the student to the basic concepts, equipment and software used to create, reinforce and record sound.

THEA 334. Sound Design for Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to theatre majors, those pursuing the sound design minor and others with permission of the instructor. Exploration in contemporary practices in sound design for the theatre.

THEA 335. Advanced Movement and Vocal Techniques. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated for a total of 6 credits. Enrollment is restricted to theatre majors upon satisfactory audition. A rotating topics course highlighting several performance training methods that link physical and vocal work.

THEA 336. Introduction to Costume Crafts. 3 Hours.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 227. The course will introduce the student to a variety of skills and application methods that are needed for the execution of costume designs in a theatrical production. An overview and basic understanding of these crafts will be explored and practiced during the semester.

THEA 337. Advanced Lighting Design II. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 237 with a minimum grade of C. Advanced study of lighting design, incorporating increasingly difficult texts, rep plots, facilities and production styles. Further exploration of the process of lighting design for theatre and other related events. Projects focus intensely on communication and the collaborative process.

THEA 338. Technical Direction I. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 217 or THEA 327. Enrollment is restricted to theatre majors. This class will explore the role of the technical director as a problem-solver, manager, leader and collaborator in the production process. Development of skills in critical thinking, communication, leadership, management, collaboration and practical applications will be emphasized.

THEA 340. Theatre Projects. 3,6 Hours.

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

THEA 341. Theatre Projects. 3,6 Hours.

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

THEA 344. Technical Direction I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to theatre majors. Introduction to the methodologies of professional technical direction including budgeting, scheduling, estimating and technical design. Students will employ critical thinking in application to project management and practical technical direction projects.

THEA 345. Technical Direction II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 344. Enrollment is restricted to theatre majors. Advanced project-based application of methodologies of professional technical direction.

THEA 347. Props Design and Construction. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Enrollment is restricted to theatre majors. A study of procedures and skills needed to be a successful prop master. Topics include organization, research, procurement methods, furniture and ornament history, upholstery and basic furniture repair.

THEA 348. Furniture Repair and Upholstery. 3 Hours.

Semester course; 1 lecture hours. 4 studio hours. 3 credits. Enrollment is restricted to theatre majors. This course is an in-depth study of furniture history, construction and repair for the stage. The student will complete projects involving design, construction and upholstery of stage furniture.

THEA 351. Rehearsal and Performance. 1-3 Hours.

Semester course; 2, 4 or 6 studio hours. 1, 2 or 3 credits. May be repeated for a maximum of six credits. Enrollment is restricted to theatre majors or by permission of instructor. Work in acting, management, design or technical areas within a TheatreVCU production.

THEA 361. Directing I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to theatre majors. Introduction to and practice in the theories of stage direction.

THEA 362. Directing II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 361. Continuing practice in solving problems involved in the production of period plays and a study of modern theories.

THEA 365. Playwriting. 3 Hours.

Semester course; 1 lecture and 4 studio hours. Enrollment requires permission of instructor. This course explores the fundamentals of playwriting through the use of Aristotelian and Freytag theories. Using these theories and assigned reading and writing exercises completed in class, the course culminates with the class creating and participating in a public reading of each student's own 10-minute play.

THEA 368. Rendering Techniques. 2 Hours.

Semester course; 4 studio hours. 2 credits. Prerequisite: THEA 262. Enrollment is restricted to theatre majors. Instruction on skills and tools needed to create sketches as a theatrical designer. Will focus on student's rendering skills and individual presentation style. Will provide experience using different media and rendering techniques. Will also help students analyze and critique their own work and help them, as artists, become better observers.

THEA 371. Mechanical Design for the Stage. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the process for, components of and applications for mechanical design for stage.

THEA 372. Control Systems for Entertainment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to current and emerging control systems used in lighting, sound, stage machinery and show control.

THEA 373. Photo Manipulation for Theatre. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the basic concepts and practices of creating computer-manipulated photo images and documents.

THEA 375. Black Performance Techniques. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 213. Enrollment is restricted to theatre majors. This advanced performance class is focused on the acting and creative techniques of the Black aesthetic as the first voice/primary perspective.

THEA 385. Diverse Voices. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum total of six credits. A study and analysis of the multicultural literature and practices of the American theatre of the 20th and 21st centuries. Students study plays from multicultural perspectives. An emphasis is placed on the performance techniques utilized by various authors as well as their literary style.

THEA 386. Property Design and Construction. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 221. This course is a study of procedures and skills needed to be a successful prop director. Topics include organization, research, procurement methods, ornament history and design.

THEA 391. Topics in Theatre. 1-3 Hours.

Semester course; 1-3 workshop hours. 1-3 credits. May be repeated for a maximum of 6 credits. Enrollment restricted to theatre majors. Flexible semester course in selected aspects of performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

THEA 392. Independent Study in Theatre. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

THEA 403. History of Dramatic Literature. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

THEA 404. History of Dramatic Literature. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

THEA 405. Advanced Scene Design I. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 306. Enrollment is restricted to theatre majors. This course will focus on the design of multiscene productions with particular attention to moving scenery and storytelling.

THEA 406. Advanced Scenic Design II. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 405. Enrollment is restricted to theatre majors. This advanced course will focus on design for opera, film and/or television. In each case students will conduct research into the origin of the story being examined and adapt those stories to themes that resonate in the current culture. Through the refinement of sketching to rough models and drafting, a package will be assembled to suit the realization of the design.

THEA 407. Advanced Scenic Technique. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisites: THEA 221 and permission of instructor. An intensive involvement in contemporary theory and practice of scenic techniques. Participation in departmental productions.

THEA 408. Advanced Scene Painting. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Repeatable for a maximum of 12 credits. Practice of fundamental scene painting technique. Students will have the opportunity to study the materials and advanced techniques of scene painting, as well as the practices and expectations of a career in scenic artistry.

THEA 409. Advanced Technical Solutions. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 338. Enrollment is restricted to theatre majors. This course will examine real-world challenges that are tied to particular productions that are more complex than the typical theater production. Current productions of the department will be involved in the study if they contain issues of an advanced technical nature.

THEA 412. Acting for Camera. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 313. Enrollment is restricted to theatre majors with a minimum 2.5 GPA in the major upon satisfactory audition or with permission of instructor. Students will learn techniques for approaching acting problems associated with performance in front of a camera.

THEA 413. Actor's Studio III. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 314. Enrollment is restricted to theatre majors. Students will learn techniques for approaching specific acting problems associated with the performance of various classical acting styles.

THEA 415. The Business of Theatre. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Open only to theatre majors upon completion of a satisfactory audition or with permission of instructor. An analysis and survey of beginning and maintaining a successful professional career in theatre, television and film, including information about contracts, unions, agents/managers, casting directors, taxes and other life strategies in order to develop a specific plan for the next steps after graduation.

THEA 416. Solo Performance. 3 Hours.

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 314. Enrollment is restricted to theatre majors. An exploration of story and personal journey. Students will explore and interrogate a diverse range of solo-performance styles culminating in a solo performance of a "work-in-progress" of between 15 and 30 minutes presented to an audience.

THEA 417. Cabaret Storytelling. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 317. Enrollment is restricted to theatre majors upon completion of a satisfactory audition. An exploration of story and personal journey through song.

THEA 418. Advanced Acting for Camera. 3 Hours.

Semester course; 6 studio hours. 3 credits. Prerequisite: THEA 412. Enrollment is restricted to theatre majors. This class provides a continuation of acting on camera, preparing the student for work in various formats, including commercials, industrials, television (sitcoms, soap operas, episodic television) and film. Understanding the required professional behavior as well as the variations in acting technique in on-camera skills are emphasized. Students will learn techniques for approaching advanced acting problems associated with performance in front of a camera in these varying mediums. The course will use scene work and the final compiling of a demo reel to expand the knowledge of the field of acting on camera.

THEA 419. Professional Preparation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to theatre majors. This course examines aspects necessary for pursuit of a successful career in various branches of the theatre/film/television profession. Subjects covered include business models, unions, types of jobs available, proper resume preparation, cover letters and artistic statements, agents/managers, etc. The class culminates in the development of a specific plan for next steps after graduation.

THEA 420. Stage Management Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 435. This course will build upon the skills and knowledge learned in earlier stage management courses. Students will improve and refine their skills in leadership, problem-solving, stress management and conflict resolution, as well as prepare to join the professional industry. Students will learn about and from other industry professionals.

THEA 421. Advanced Costume Design Studio I. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: THEA 321 and 322. Advanced studio course exploring the practice of the creative techniques and the practical standards of the industry developed by professional union costume designers.

THEA 422. Advanced Costume Design Studio II. 3 Hours.

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: THEA 321 and 322. Advanced studio course exploring the practice of the creative techniques and business processes used according to the practical standards of the industry developed by professional union costume designers. During the semester students will create a digital interview-quality portfolio.

THEA 423. Modern Drama. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Intensive study of major continental and American plays.

THEA 424. Modern Drama. 3 Hours.

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Intensive study of major continental and American plays.

THEA 426. Advanced Dramatic Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 303. A practical approach to the creation of original scripts for theatre or film. Crosslisted as: ENGL 433.

THEA 432. Stage Management: Music Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of music theory as it pertains to the opera and musical theatre fields.

THEA 433. Stage Management: Musical Theatre and Opera. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of the specific techniques required to successfully stage-manage musical theatre and opera.

THEA 434. Stage Management: Maintaining and Remounting Productions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of the advanced techniques in stage management required to successfully maintain a long-running show and remount a previously realized production.

THEA 435. Advanced Stage Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: THEA 325. Enrollment is restricted to theatre majors. An analysis of the techniques necessary for a successful career as a stage manager, including studying resumes, interview skills, unions and other areas.

THEA 437. Advanced Lighting Design III. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 337 with a minimum grade of C. Course incorporates increasingly difficult texts, facilities and production styles and alternative venue and production styles, such as landscape lighting and concert. Use of industry standard technology and 3-D rendering is a focus in the class.

THEA 439. Advanced Patterning Techniques I. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisites: THEA 329 and 332. Garment patterning based on various historic periods. Projects emphasize creative solutions to patterning problems employing critical thinking. Skills learned in prerequisite courses will be practiced, developing competency as related to achieving fit, form and function of period garments within the limitations of a given design.

THEA 440. Theatre Projects. 3,6 Hours.

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

THEA 441. Theatre Projects. 3,6 Hours.

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

THEA 442. Advanced Patterning Techniques II. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 439. Garment patterning based on various historic periods. Projects emphasize creative solutions to patterning problems employing critical thinking. Skills learned in prerequisite course will be practiced and built upon, developing complex understructures for period clothing while practicing competency in patterning and building the period garments, which complement the fit, form and function of these period garments.

THEA 451. Rehearsal and Performance. 1-3 Hours.

Semester course; 2, 4 or 6 studio hours. 1, 2 or 3 credits. May be repeated for a maximum of six credits. Enrollment is restricted to theatre majors or by permission of instructor. Work in acting, stage management, design or technical areas within a TheatreVCU production.

THEA 469. Advanced Patterning Techniques III. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 442. Advanced patterning techniques centered on tailoring for students who have completed flat patterning and draping classes. This class explores modern and historical methods of tailoring; lining and finishing are emphasized for stage and costume use. The course assesses the student's competency in skills taught in previous course work.

THEA 470. Advanced Patterning Techniques IV. 3 Hours.

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 469. Exploration of costume patterning with an emphasis on period patterning in a production setting, assessing the basic and advanced knowledge of draping and flatpatterning. This course provides students with intense production projects on VCU Mainstage productions synthesizing all aspects of patterning.

THEA 491. Topics in Theatre. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Restricted to theatre majors. Flexible semester course in selected aspects of performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

THEA 492. Independent Study in Theatre. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Prerequisites: senior standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

THEA 493. Professional Internship. 3-9 Hours.

Semester courses; 3-9 credits. Restricted to theatre majors. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

THEA 494. Professional Internship. 3-9 Hours.

Semester courses; 3-9 credits. Restricted to theatre majors. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

THEA 495. Senior Project: Portfolio Review. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: senior standing and a minimum of 18 credits in 300- or 400-level major courses. Restricted to theatre majors. A capstone experience integrating resume preparation and professional development within the field of theatre. Documentation of creative activities and achievements accumulated during theatre studies is compiled for a portfolio review.

Theatre Lab (THEZ)**THEZ 221. Introduction to Scene Design Laboratory. 1 Hour.**

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 221. Participation in departmental productions. Observation and participation in the practical application of scene design in performance.

THEZ 223. Practicum in Theatre Technology Laboratory. 1 Hour.

Semester courses; 3 studio hours. 1, 1 credit. Observation and participation in the practical application of theatre technology in performance.

THEZ 224. Practicum in Theatre Technology Laboratory. 1 Hour.

Semester courses; 3 studio hours. 1, 1 credit. Observation and participation in the practical application of theatre technology in performance.

THEZ 225. Basic Stage Electronics-Lighting Laboratory. 1 Hour.

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 228. Basic Stage Costuming and Make-up Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 229. Introduction to Lighting Design Laboratory. 1 Hour.

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 305. Scene Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design technical courses.

THEZ 306. Scene Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design technical courses.

THEZ 321. Research Techniques for Costume Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 322. Research Techniques for Costume Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 323. Practicum in Advanced Theatre Technology. 1 Hour.

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 323. Observation and experience in a practical situation with an emphasis on leadership and crew management.

THEZ 324. Practicum in Stage Lighting. 1 Hour.

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 324. Observation and experience in a practical situation with an emphasis on leadership and crew management.

THEZ 326. Theatrical Sound Design Laboratory. 1 Hour.

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 326. Participation in departmental productions. Observation and participation in the practical application of sound design and execution in performance.

THEZ 407. Advanced Scenic Technique Laboratory. 1 Hour.

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 421. Advanced Costume Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 422. Advanced Costume Design Laboratory. 1 Hour.

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

THEZ 429. Advanced Lighting Design Laboratory. 1 Hour.

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

School of Business

Accounting (ACCT)

ACCT 202. Accounting for Non-business Majors. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The course is open only to non-business students. A nontechnical introduction to the principles of financial and managerial accounting with emphasis on the use and interpretation of financial reports, managerial planning and control. The course is for the individual who seeks a basic knowledge of accounting and its uses. It is designed for the user of accounting information rather than the preparer. This course cannot be substituted for ACCT 203, 204 or 205. Students graduating with a major in the School of Business cannot receive credit for this course.

ACCT 203. Introduction to Accounting I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on financial accounting.

ACCT 204. Introduction to Accounting II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 with a minimum grade of C. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on managerial accounting.

ACCT 205. Introductory Accounting Survey. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students in the post-baccalaureate undergraduate certificate programs in accounting and information systems, students seeking a B.S. in Financial Technology, students enrolled in the College of Engineering, or by permission of instructor. An accelerated course covering theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. May not be counted toward any of the B.S. programs offered by the School of Business other than the B.S. in Financial Technology.

ACCT 291. Topics in Accounting. 1-3 Hours.

Semester course. 1-3 credits. Prerequisite: permission of instructor. An in-depth study of selected accounting topics. Graded as pass/fail.

ACCT 301. Federal Income Taxation for Individuals. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 204 or ACCT 205 with a minimum grade of C. Enrollment is restricted to accounting majors who have completed at least 54 credit hours (junior standing). Income tax legislation and the concept of taxable income; federal income tax law applicable to individuals.

ACCT 303. Intermediate Accounting I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 or ACCT 205 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5. Focuses on financial accounting and accounting standards, including the conceptual framework for financial accounting. Includes an in-depth study of the income statement, the balance sheet and an introduction to the statement of cash flows. Also covers valuation of inventories.

ACCT 304. Intermediate Accounting II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for acquisition and disposition of property, plant and equipment, intangible assets, contingencies, long-term liabilities, stockholders' equity, earnings-per-share, and investments.

ACCT 305. Intermediate Accounting III. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for income taxes, accounting for pensions and postretirement benefits, accounting for leases, accounting changes, error analysis, statement of cash flows, full disclosure in financial reporting and accounting for state and local governments and not-for-profit organizations.

ACCT 306. Cost Accounting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing) or those in the post-baccalaureate certificate program. Cost accumulation for inventory pricing and income determination. Cost behavior concepts for planning and control. Job order and process cost systems, standard costs, budgets and special topics in relevant costs for managerial decisions.

ACCT 307. Accounting Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines design and evaluation of manual and computerized accounting information systems. Emphasis on the system of internal controls and the impact of computers on those controls.

ACCT 401. Governmental and Not-for-profit Accounting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). The role of accounting in the management of resources entrusted to government and nonprofit entities, including accounting and reporting standards. Accounting in municipalities and nonprofit entities such as hospitals, charitable and health organizations, and colleges and universities.

ACCT 402. Advanced Cost Accounting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual cost/managerial course designed to familiarize students with the more complex aspects of cost/managerial accounting concepts including process costing, standard costing, activity-based costing, Just-in-Time inventory systems, enterprise resource planning and issues relating to the relative strengths and limitations of managerial accounting.

ACCT 403. Management Control Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual management control systems course designed to expose students to the theoretical and conceptual foundations of management control systems and to integrate accounting into the managerial decision/control process. Uses a predominantly case-oriented approach. While primary emphasis will be on integrating accounting into the management control process, significant attention also will be devoted to the behavioral issues involved in management control system design and implementation. Students also will receive hands-on experience in structuring and formulating control systems in an Enterprise Resource Planning system environment.

ACCT 404. Introduction to Forensic Accounting and Fraud Examination. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Introduction to the area of forensic accounting. Topics include the detection of fraudulent financial reporting, employee fraud, money laundering, digital forensic analysis and electronic evidence, evidence management, computer forensics, and an introduction to business valuation.

ACCT 406. Auditing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 and 307 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). A study of the conceptual, theoretical and practical procedures applicable to auditing – both external and internal. Primary emphasis is placed upon the theory of audit evidence; the objectives, techniques and procedures for financial and operational audit reports.

ACCT 408. Data Analytics for Accountants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 307 with a minimum grade of C; and MGMT 301, SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The spreadsheet analysis and written communication of data relating to accounting-focused business problems.

ACCT 409. Research and Communication for Accountants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Focuses on the research of accounting issues and preparation of technical reports relating to that research. Leadership and team dynamics are explored using group projects.

ACCT 410. Advanced Tax Accounting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 301, ACCT 303 and ACCT 408, each with a minimum grade of C. Enrollment is restricted to students who have completed a minimum of 54 credit hours (junior standing). Complex tax problems of the trust, partnership and corporation. Particular emphasis is given to tax planning.

ACCT 491. Topics in Accounting. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites vary by topic. Study of current topics. Topics may vary by semester. See the Schedule of Classes for specific topics to be offered.

ACCT 492. Independent Study. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Restricted to accounting majors who have completed at least 54 credit hours (junior standing). The purpose of this course is to allow international students to take advantage of an internship work experience. Graded as pass/fail.

ACCT 493. Internship in Accounting. 3 Hours.

Semester course; 3 credits. Prerequisites: ACCT 304 with a minimum grade of B; senior standing in accounting and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. A structured course in which the first three weeks are spent in the classroom, followed by 11 weeks at a workplace. The last week of the semester students return to the classroom for discussion and reflection on the work experience. An internship portfolio is required at the end of the course. Graded as pass/fail.

ACCT 497. Guided Study in Accounting. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Maximum total of three credits. Prerequisites: junior standing in accounting and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

Business (BUSN)**BUSN 171. Mathematical Applications for Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 with a minimum grade of C, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool. This course was formerly numbered MGMT 171 and SCMA 171.

BUSN 201. Foundations of Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112, HONR 200 or HONR 250. Introduces students to basic business environments and business functions and practices. Builds awareness of corporate social responsibility and ethical business behavior. Helps students gain an integrated awareness of business and practice analytical skills needed for their advanced business courses and careers.

BUSN 202. Foundations of Business II. 3 Hours.

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisite: BUSN 201 with a minimum grade of C. First semester: Introduces students to basic business environments, entrepreneurial thinking, and business functions and practices. Helps students gain an integrated awareness of business and practice analytical skills needed for their advanced business courses and careers. Second semester: Examines business functions and practices needed for sustainable business operation, building on knowledge and skills from BUSN 201 and executing or analyzing an integrated project or comprehensive case analysis. Students should take BUSN 202 immediately following BUSN 201.

BUSN 205. Introduction to the World of Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112. This course will cover the concepts, principles and operations of private enterprise in the world economy. Students will explore the functions of modern business management, marketing and accounting. They will have a chance to practice making business decisions in a safe environment; learn how to approach ethical dilemmas in business and explore classic international business blunders made due to a lack of cross-cultural awareness; and begin working on their own professional habits, learn how to search for a job or internship and learn professional ways to get a team to work well together.

BUSN 212. Differential Calculus and Optimization for Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 171* or MATH 151 with a minimum grade of C, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. Students should take BUSN 212 immediately after completing BUSN 171. Students may not receive degree credit for more than one of BUSN 212, MGMT 212, SCMA 212 or MATH 200. This course was formerly numbered MGMT 212 and SCMA 212. *Formerly MGMT 171, SCMA 171.

BUSN 225. Winning Presentations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to School of Business freshmen, sophomores and juniors in the foundation or advanced programs. Why are some presenters bad, some good and others great? Why do some people have more “presence” than others? What leadership skills work in a room full of people who are not on the same page? How does one pitch an idea in less than two minutes? Presentation skills involve more than just speaking in public. Good presentation skills require an understanding of yourself, your subject and your audience. This course will explore the skills involved in mastering all of these. Students may receive credit toward graduation for only one of SPCH 121, SPCH 321 or BUSN 225.

BUSN 291. Topics in Business. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

BUSN 293. Internship in Business. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. May be repeated for credit with different topics for a maximum of six credits. Enrollment is restricted to School of Business major or minor with permission of associate dean for undergraduate studies. Intention to enroll must be indicated to the instructor or director prior to advance registration for semester of credit. Exposes students to working in a business environment, enhances professionalism and develops rapport with employers. The course allows students to earn academic credit while gaining real-world experience in order to enhance their business education. May be used as an elective in the business foundation program but cannot count toward the advanced business program. Each credit requires 80 hours in the internship.

BUSN 301. Career and Professional Development. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: HONR 200, HONR 250 or UNIV 200. Enrollment is restricted to majors in the School of Business who have completed at least 24 credit hours (sophomore standing). This course focuses on preparing students to enter and succeed in the world of business today. Students will examine standard practices and expectations across organizations, evaluate and develop an individual professional style, create a career plan, and prepare to successfully market themselves for an internship or job.

BUSN 323. Legal Environment of Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have achieved sophomore standing. Basic legal concepts applicable to business, including the legal aspects of operating a business, contracts, employment relationships, sales, and bailments and commercial paper. Also includes ethical considerations and social and political influences. Students may not receive degree credit for both BUSN 323 and ACCT/MGMT 481. This course was formerly numbered MGMT 323 and SCMA 323.

BUSN 325. Organizational Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HONR 200, HONR 250 or UNIV 200; and BUSN 225, SPCH 121 or SPCH 321. Enrollment is restricted to students majoring in the School of Business who have completed at least 54 credit hours (junior standing). A study of interpersonal, team and organizational communication practices in modern dynamic work and virtual environments. This course includes dealing with written business messages, report writing, job-search techniques, nonverbal communication, oral presentations and intercultural communication. The focus will include both theoretical constructs and skill development. This course was formerly numbered MGMT 325 and SCMA 325.

BUSN 329. Introduction to Intercultural Communication. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). An introduction to the basic concepts, principles and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process and nonverbal communication aspects. Appropriate for business and non-business majors. This course was formerly numbered INTL 329, MGMT 329 and SCMA 329.

BUSN 391. Topics in Business. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

BUSN 400. Principles of Consulting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior status and acceptance into International Consulting Program. Corequisite: BUSN 401. Intended to provide students with “formal” training in how to conduct consulting engagements. The course is designed to teach students how to conduct consulting engagements by providing academic background through readings and lectures, real-world perspectives from practicing consultants, and practice application through simulations and cases. The course culminates in a consulting engagement with a real client from the Richmond business community to provide the students with an opportunity to apply the consulting skills they learned in the classroom.

BUSN 401. International Consulting Practicum. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior status and acceptance into International Consulting Program. Corequisite: BUSN 401. Intended to provide students with an opportunity to apply the lessons learned about consulting in BUSN 400 to a real business client in a foreign country.

BUSN 490. Emerging Topics in Business. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Emerging topics in business designed to provide material not covered by an existing course or program. May be general business or multidisciplinary. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

BUSN 491. Special Topics in Business. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

BUSN 492. Independent Study in Business. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Prerequisites: School of Business major and permission of instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. The number of credit hours will be determined by the director of undergraduate studies. Intensive study under the supervision of a faculty member in an area not covered in-depth or contained in other School of Business courses and/or independent investigation and research of business problems through readings, data collection and analysis. Written and oral progress reports as well as a final report and presentation are required.

BUSN 493. Internship in Business. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits. May be repeated for credit with different topics for a maximum of six credits. Enrollment is restricted to School of Business majors with permission of the associate dean for undergraduate studies. Intention to enroll must be indicated to the instructor or director prior to advance registration for semester of credit. Involves students in a meaningful experience, typically 20 hours per week, in a setting appropriate to business. Written interim and final reports required.

BUSN 499. Business Knowledge Exam. 0 Hours.

Semester course; variable hours. 0 credits. Prerequisites: MGMT 310; MKTG 301; INFO 360, 361 or ACCT 307; FIRE 311; and SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to business majors. This course consists of a capstone exam covering general business knowledge in the subjects of accounting, economics, finance, information systems, management, marketing and statistics. Students may be asked to complete follow-up activities in the areas in which they have weak knowledge in order to earn a passing grade. Students should contact their academic adviser for information on how to take the exam and register for this course. Graded as pass/fail.

Economics (ECON)**ECON 101. Introduction to Political Economy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues, tax policy, inflation expectations, unemployment, foreign trade and the effectiveness of fiscal and monetary policies. Crosslisted as: INTL 102.

ECON 203. Introduction to Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of economic principles, institutions and problems. The course is designed to provide basic economic understanding for students who do not expect to major in economics or in the School of Business. Not applicable for credit toward economics and business majors. Students may receive credit toward graduation for only one of the following three courses: ECON 203, ECON 205 or ECON 210.

ECON 205. The Economics of Product Development and Markets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to some of the fundamental economic concepts necessary to effectively operate in today's marketplace. Basic elements of microeconomics, net present value analysis and market strategy will be covered in class. The goal is to provide students with a better understanding of how to approach business problems and of proven problem-solving techniques. Intended for engineering students. Students may receive credit toward graduation for only one of the following three courses: ECON 203, ECON 205 or ECON 210.

ECON 210. Principles of Microeconomics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy with a focus on microeconomics. Students may receive credit toward graduation for only one of the following three courses: ECON 203, ECON 205 or ECON 210.

ECON 211. Principles of Macroeconomics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy with a focus on macroeconomics.

ECON 291. Topics in Economics. 1-3 Hours.

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

ECON 300. Contemporary Economic Issues. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. Students will learn to think critically about current policy issues using basic economic principles. Communication skills will be developed through presenting, discussing and debating alternative positions in class. Students will work in teams to outline the basic economic incentives and the direct and indirect costs and benefits associated with different policy actions. Through teamwork students will practice leadership skills and methods to manage group dynamics. Topics will vary by semester and may include the economics of discrimination, the environment, health care, cultural arts, education, business ethics, fiscal policy, monetary policy, globalization, inequality and immigration.

ECON 301. Microeconomic Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and BUSN 212* or MATH 200. Analysis of the principles that govern production, exchange and consumption of goods and services. Topics include demand analysis, production and cost theory, price and output determination, theory of markets and distribution theory.

*Formerly MGMT 212, SCMA 212.

ECON 302. Macroeconomic Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; ECON 211; and BUSN 212* or MATH 200. A general survey of national income analysis and macroeconomic theory. Detailed study of public policies affecting price levels, employment, economic growth and the balance of payments. *Formerly MGMT 212, SCMA 212.

ECON 303. Managerial Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; ECON 211; and BUSN 212* or MATH 200. This course is restricted to students who have completed at least 54 credit hours (junior standing). Application of tools of economic analysis to allocation problems in profit and nonprofit organizations. Models for evaluating revenue, production, cost and pricing will be presented. Emphasis on developing decision rules for turning data into information for solving problems. *Formerly MGMT 212, SCMA 212.

ECON 305. Public Finance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. An economic analysis of federal, state and local government budgeting, revenue sources and expenditures.

ECON 307. Money and Banking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 211. A study of money, financial markets and the financial structure with emphasis on commercial banks and the Federal Reserve System. Relationships between economic activity and money supply are introduced.

ECON 312. E-commerce and Markets for Information Goods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. This course surveys the ways that information and emerging information technologies affect market organization and market efficiency. Competitive strategies and regulatory policy for information markets also are considered. Topics include network effects, first mover advantages, auctions, price discrimination and organizational structure.

ECON 313. Economics of Transportation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. An economic analysis of the transportation industry with special emphasis on regulation, public policy and urban transportation.

ECON 315. Economic Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. An introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development. Crosslisted as: INTL 315.

ECON 321. Urban Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas. Crosslisted as: URSP 321.

ECON 325. Environmental Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). The application of economic analysis to externalities such as air and water pollution, pesticide control, land use planning and other environmental issues. The role of cost/benefit analysis in the decision-making process is developed. Efficiency and equity issues are evaluated.

ECON 329. International Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates and international monetary systems. Crosslisted as: INTL 329.

ECON 333. Behavioral Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. Identifies when behavior systematically violates mainstream models and provides alternative behavioral models which are psychologically and empirically plausible. Discusses a variety of violations including endowment effects, framing, dynamic inconsistency and the winner's curse.

ECON 338. Game Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. Analyzes strategic situations using game theory. Applies the analysis to a variety of settings and questions. Develops an understanding of the uses and limitations of the analysis.

ECON 402. Business Cycles and Forecasting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. An examination of repetitive variations in business activity. The measurement and analysis of economic fluctuations and how they affect the business environment. Stresses modern forecasting techniques.

ECON 403. Introduction to Mathematical Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; ECON 211; and BUSN 212* or MATH 200. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The application of mathematical techniques to economic theory and economic models. *Formerly MGMT 212, SCMA 212.

ECON 419. History of Economic Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210; and ECON 211. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth and distribution from the 18th through the 20th centuries will be presented.

ECON 421. Government and Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. The application of economic analysis to the behavior of business, industry and government regulation. Topics include the causes and exercise of monopoly power, antitrust enforcement, public utilities and industry studies.

ECON 431. Labor Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, 301 and 302; and SCMA 301*, STAT 210, STAT 212 or PSYC 214. This course is restricted to students who have completed at least 54 credit hours (junior standing). Analysis of labor markets and institutions to gain an understanding of the process of wage and employment determination. Both historic and current topics are included. *Formerly MGMT 301.

ECON 441. Experimental Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, ECON 301 and ECON 302; and SCMA 301*, STAT 210, STAT 212 or PSYC 214. Enrollment is restricted to students with junior standing. Students will learn about the leading models of decision making and human behavior in markets. The course will focus on using experimental methods to test the models' hypotheses. Students will learn how to design experiments, collect experimental data, and how to examine the data and interpret the results. *Formerly MGMT 301.

ECON 442. Economic Growth. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, ECON 301 and ECON 302; and SCMA 301*, STAT 210, STAT 212 or PSYC 214. Explores determinants of cross-country income differences using economic models, economic history and data analysis. Analyzes factors that influence productivity growth and diffusion of technology between countries. *Formerly MGMT 301.

ECON 461. Monetary Policy Seminar. 3 Hours.

Semester course; 3 lecture/seminar hours. 3 credits. Prerequisites: ECON 300, ECON 301 and ECON 302; and SCMA 301*, STAT 210, STAT 212 or PSYC 214. Enrollment is restricted to students with junior standing. Students work individually and in teams to formulate and justify a monetary policy recommendation. Students will base their recommendation on an economic analysis of current conditions and their prediction regarding the future state of the economy. The class is organized around discussions and presentations, with short lectures as needed. *Formerly MGMT 301.

ECON 489. Senior Seminar in Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, ECON 301 and ECON 302; SCMA 301*, STAT 210, STAT 212 or PSYC 214. Enrollment is restricted to students with junior standing. Analysis of economic theory and problems. Students will study a few topics in depth, focusing on understanding the current research, critically analyzing controversial issues and using data to investigate competing claims. *Formerly MGMT 301.

ECON 491. Topics in Economics. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per topics course; maximum total of 6 credits for all topics courses. Prerequisite: junior standing. An in-depth study of a selected economic topic, to be announced in advance.

ECON 492. Independent Study in Economics. 1-3 Hours.

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as an economics major and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

ECON 493. Internship in Economics. 1-3 Hours.

Semester course; the student is expected to work at the site 15-20 hours per week. 1-3 credits. Prerequisites: junior standing, a minimum of 3.0 GPA in economics courses, at least 15 economics credits and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during registration for semester of credit. The internship is designed to give students practical experience in an appropriate supervised environment in the public or private sector. Graded as pass/fail.

Finance, Insurance and Real Estate (FIRE)**FIRE 291. Topics in Finance, Insurance and Real Estate. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

FIRE 301. Personal Financial Planning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to assist individuals and households in understanding and making common financial decisions. Units include income and expenditure, credit, borrowing, banking, savings, insurance, home buying, investment, and estate planning.

FIRE 305. Principles of Real Estate. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on the language, principles, practices and laws that govern the real estate enterprise, including property rights, legal elements, physical aspects of location and production, brokerage, valuation, ethical dimensions, development, financing and land use.

FIRE 306. Regulatory Aspects of Safety and Risk Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines political, scientific and social concepts of risk that influence the regulation of certain societal hazards and threats. Includes a survey of federal and state laws, regulations and standards that impact upon employment, the environment, industrial security, consumer protection and occupational safety and health.

FIRE 307. System Safety. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Addresses the concepts and practices of system safety; included are basic system concepts, application of system safety techniques, qualitative and quantitative applications such as fault-free, failure-mode-and-effects, MORT and cost-benefit analyses.

FIRE 308. Incident Investigation and Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Reviews various conceptual and analytical models used in accident/incident investigation strategies and reporting systems, report formats, data collection methods, causal inferences, problem identification and data analysis; in-depth case studies and epidemiological reviews of recent events will be emphasized.

FIRE 309. Risk and Insurance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Nature of risk; insurance and other risk-handling methods; examination of basic life, health, property and liability principles and coverages.

FIRE 311. Financial Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200 or BUSN 212*; ACCT 203 or ACCT 202 (for non-business majors); and ECON 210, or ECON 203 or ECON 205 with a minimum grade of B. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5. Principles of optimal financial policy in the procurement and management of wealth by profit-seeking enterprises; the application of theory to financial decisions involving cash flow, capital structure and capital budgeting. *Formerly MGMT 212, SCMA 212.

FIRE 312. Financial Modeling. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 with a minimum grade of C; and SCMA 301, STAT 210, STAT 212 or STAT 541. Enrollment is restricted to students with majors or concentrations offered by the Department of Finance, Insurance and Real Estate who have completed at least 54 credit hours (junior standing). This course is designed to introduce students to a wide array of primarily Excel techniques used in financial model building. Students will be introduced to techniques such as data tables, solver, matrix manipulation, array formulas, pivot tables, etc., to create financial models that are common in the areas of finance, risk management and real estate finance.

FIRE 313. Financial Management for Small Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

FIRE 315. Real Property Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Real property economics, planning, construction, marketing and management of leased properties.

FIRE 316. International Financial Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment. Crosslisted as: INTL 416.

FIRE 317. Investments. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311; and SCMA 301, STAT 210, STAT 212, STAT 312 or STAT 541. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the market for long-term corporate securities. Emphasis is given to the valuation of bonds, common stocks, options and convertible securities, and portfolio concepts. Designed to provide an understanding of the functioning of an efficient market.

FIRE 319. Financial Mathematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 or MATH 201, either with a minimum grade of B. The course provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows.

FIRE 320. Actuarial Probability Concepts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 with a minimum grade of B. Probability models, random variables, expectation, special distributions and the central limit theorem. The theory is illustrated by numerous examples from actuarial and financial fields. This class covers parts of CAS Exam 1 and SOA Exam P, which are required for the designation of associate of the Society of Actuaries and Casualty Actuarial Society.

FIRE 321. Intermediate Financial Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Advanced topics in financial management with emphasis on the theoretical bases for the valuation of the firm.

FIRE 325. Real Estate Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Legal fundamentals of real estate including contracts, risk management, environmental and ethical issues, concepts of title, title examination, easements, conveyances, liens and recording statutes affecting real estate.

FIRE 329. E-business Risk Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 202. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the risks associated with e-business and the practice of e-commerce.

FIRE 359. Issues in Risk Management and Insurance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course focuses on timely issues in the field of risk management and insurance. Students will consider the role of government and the insurance industry as well as the use of other financial solutions in handling risks faced by businesses and individuals. The topics covered change to reflect current societal and industry issues and to explore new risk management innovations.

FIRE 417. Security Analysis and Portfolio Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 317 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). A detailed analysis of stocks and bonds as well as options and futures. Emphasis is on models for portfolio selection, revision and performance evaluation.

FIRE 419. Advanced Risk and Insurance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). It is a risk and insurance course with emphasis on more mathematical computations and analysis. Market, credit and operational risks are covered, along with legal and catastrophic risk assessments. Sustainability is important to this course. Topics covered include (but not limited to) forecasting of losses – loss triangles and computations of reserves; risk mapping and the risk management matrix; cost/benefit and risk/award analyses; pricing; capital structure, risk-based capital and economic capital; financial statements using audit techniques (accounting); insurance regulation; life cycle financial risks; insurance solutions to property/casualty and life/health risks.

FIRE 424. Property and Liability Insurance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds.

FIRE 425. Real Estate Appraisal. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 305 or FIRE 316. This course is restricted to students who have completed at least 54 credit hours (junior standing). Theory and practice of real property valuation from fundamental concepts to complex income-producing properties and partial-interest valuations. Technology-related tools are employed in the course, including financial modeling with various software programs.

FIRE 429. Property and Liability Insurance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Regulated property and liability risks with emphasis on regulated and non-regulated markets and products. The course includes major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds and unusual new risks, including catastrophic risks covered by alternative, less-regulated insurance solutions. The course includes sustainability issues and the way to mitigate natural and man-made catastrophes and InsurTech.

FIRE 435. Real Estate Finance and Capital Markets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 305. This course is restricted to students who have completed at least 54 credit hours (junior standing). Instruments, techniques and institutions of real estate finance; the mortgage market; financing process; mortgage risk analysis; creative financing; emphasis on policies and procedures used in financing residential and commercial properties and their interaction with the capital markets. Technology-related tools are employed in the course, including financial modeling with various software programs.

FIRE 439. Life Cycle Risk Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The function, nature and uses of life and health insurance and annuities; operational aspects of life and health insurance companies. Management of group life, health, disability and retirement plans. Governmental and employers' solutions to life cycle risks – sustainability through social insurance programs, group insurance and innovations. The course reflects the dynamic nature of this field and covers cost/benefits analysis, best solutions to risks and a complete portfolio project of plan design, cost considerations, funding, regulation and tax considerations. Full-time students who pass this course can receive credit for the CLU HS323 examination from the American College. See instructor for details.

FIRE 441. Funds Management in Financial Institutions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Funds management techniques for selected financial institutions including investment companies (mutual funds), life and casualty insurers, savings and loans, mutual savings banks, commercial banks, and pension funds.

FIRE 444. Occupational Safety, Health and Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health and workplace security programs are studied to facilitate understanding and application in the workplace.

FIRE 445. Real Estate Investment Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 425 and FIRE 435. This course is restricted to students who have completed at least 54 credit hours (junior standing). This is the capstone course for real estate majors and covers the analytical methods and tools useful for analyzing commercial real estate investments, including a multidisciplinary approach to financial, spatial and social economics, which builds a cohesive framework for analyzing complex investment decisions emphasizing fundamentals of property and financial markets.

FIRE 449. Employee Benefit Planning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability and retirement plans. Governmental and employers' solutions to life cycle risks – sustainability through social insurance programs, group insurance and innovations. The course reflects the dynamic nature of this field and requires cost/benefits analysis, best solutions to risks and a complete portfolio project of plan design, cost considerations, funding, regulation and tax considerations.

FIRE 451. Options, Futures and Swaps. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C or FIRE 317 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Analysis and valuation of speculative securities and markets, including options, futures and swaps, with emphasis on their use for hedging and speculative purposes. Major valuation models and term structure models are discussed with applications to problems in finance considered.

FIRE 459. Insurance Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course covers the legal concepts and doctrines applicable to insurance. Fundamental legal aspects of all risks and aspects of sustainability. The course provides legislative issues for all solutions to life cycles risks: life and health insurance, pensions, catastrophes (natural and man-made such as terrorism) and property and liability insurance.

FIRE 461. Cases in Financial Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Cases involving financial decisions for various forms of business enterprises.

FIRE 469. Advanced Property/Casualty Insurance: Alternative Markets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309 or FIRE 419. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk with emphasis on alternative, less-regulated insurance solutions to all types of risks. The course includes sustainability issues and the way to mitigate natural and man-made catastrophes including sophisticated modeling and techniques. The course covers Lloyds of London; excess and surplus lines carriers; risk retention group, self-insurance, captives and shadow insurance; reinsurance; multilayers of coverage; catastrophe bonds; terrorism; regulation; liability issues globally; social responsibility.

FIRE 479. Managing Financial Risk. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Pre- or corequisite: FIRE 317. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Sources of financial risk. Measurement and uses of enterprisewide financial risk techniques. A variety of analytical tools will be used to learn about value at risk, credit risk, stress testing, financial risk management and actuarial models, and how to manage financial risk.

FIRE 491. Topics in Finance, Insurance and Real Estate. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

FIRE 492. Independent Study in Finance, Insurance and Real Estate. 1-3 Hours.

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

FIRE 493. Internship in Finance, Insurance and Real Estate. 3 Hours.

Semester course; 3 credits. Course restricted to students with junior standing and a concentration in finance or risk management and insurance or a declared major in financial technology or real estate, a minimum GPA of 2.5, and permission of the Department of Finance, Insurance and Real Estate chair or the director of the insurance or real estate programs. Involves students in a meaningful experience in finance, insurance or real estate. Intention to enroll must be indicated to the chair or appropriate program director.

FIRE 496. Practicum in Portfolio Management. 3 Hours.

Semester course; 3 practicum hours. 3 credits. Enrollment is restricted to students with senior standing and two prior semesters of active participation in the VCU Student Managed Investment Portfolio. Registration for this course requires permission of the Department of Finance, Insurance and Real Estate chair or the director of the Capital Markets Center. This course is an experiential learning project in applied portfolio management. Students will perform fundamental security analysis, security selection and risk management for a real money portfolio funded by the VCU School of Business Foundation. They will also build a mock portfolio, create a detailed company valuation model and write a reflection paper.

Information Systems (INFO)**INFO 160. Digital Literacy: Computer Concepts, Internet, Digital Devices. 1 Hour.**

Semester course; 1 lecture hour (offered online). 1 credit. Overview of basic computer concepts, the Internet, new technologies and digital security. Topics include but are not limited to computing devices -- hardware and software -- skills for using and evaluating Internet content and security with digital devices. This course provides the foundation in digital technologies to prepare students for other business courses and application software courses in the INFO16X series. Administered as a self-paced course with all online content. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 161. Digital Literacy: Word Processing Skills. 1 Hour.

Semester course; 1 lecture hour (offered online). 1 credit. Presents academic- and professional-level word processing skills. Topics include but are not limited to document preparation and modification, tables and graphic enhancements, collaboration, formatting for research papers, newsletters, forms, and linking to other applications. The course will help students prepare documents to support professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 162. Digital Literacy: Spreadsheets Skills I. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Introduces students to academic and professional spreadsheet skills. Topics include but are not limited to the entering of text, numbers and formulas; formatting; moving; copying; recalculation; retrieving; charting; saving; and printing with introductory coverage of data manipulation. The course will help students prepare analyses, tables and charts to assist with professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 163. Introduction to Web Page Design and Application Software. 1 Hour.

Semester course; 1 credit. Introduces students to Web page design and construction using application software. Topics include Web page creation and modification, hypertext links, tables, graphics, and website organization. Graded as pass/fail. Administered as a self-paced, computer-aided instructional course.

INFO 165. Digital Literacy: Spreadsheet Skills II. 1 Hour.

Semester course; 1 lecture hour (offered online). 1 credit. Presents intermediate-level academic and professional spreadsheet skills. Topics include but are not limited to advanced formulas, statistical and financial functions, multiple worksheet/workbook management, macros and pivot tables. This course is designed for students wanting to advance their previous spreadsheet skills. Administered as a self-paced course with all online content. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 166. Digital Literacy: Database Skills. 1 Hour.

Semester course; 1 lecture hour (offered online). 1 credit. Introduces students to academic and professional database skills. Topics include but are not limited to creating and editing tables and forms, sorting and filtering data, and generating reports. Administered as a self-paced, online course. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 167. Introduction to Internet Researching. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Course emphasizes Internet search tools and research skills development while expanding students understanding of the World Wide Web and its resources. Students will learn to explore and evaluate the various types of search sites, including the VCU Library Internet resources and learn skills for developing researching strategies. Using a microcomputer-based Web browser such as Internet Explorer or Netscape, students will learn about advanced browser features that will aid them in their search efforts. This course provides the necessary foundation to help students better find and use Web resources for documents and papers that other VCU course work may require.

INFO 168. Digital Literacy: Presentation Skills. 1 Hour.

Semester course; 1 lecture hour (offered online). 1 credit. Introduces students to academic and professional presentation skills. Topics include but are not limited to creating and editing presentations, creating and modifying images/graphics, and use of video/audio media tools. The course will help students prepare presentations for professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level. Purchase of online training/assessment package required.

INFO 169. Multimedia Presentations. 1 Hour.

Short course; 1 lecture hour. 5 weeks. 1 credit. Familiarizes students with the fundamental use of multimedia to enhance presentations. Topics include adding animation, creating templates, linking to other resources as well as audio and video. The course will help students to prepare more effective and professional presentations.

INFO 202. Introduction to E-business Technologies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the technologies used in e-business. Students will be introduced to current or emerging Web languages, e-business software development environments, Web application servers and other packages used in creating and running Web applications.

INFO 250. Introduction to Programming. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 171*. Introduces students to writing, testing and debugging Java programs using simple logic and algorithms. Basic Java applets and the graphic user interface are covered. Cannot be used as an elective in the information systems major. *Formerly MGMT 171, SCMA 171.

INFO 291. Topics in Information Systems. 1-3 Hours.

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

INFO 300. Information Technology Infrastructure. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or co-requisite: INFO 202, CMSC 245 or CMSC 255. Principles of computer hardware and software architecture, network communications technologies and security. Introduction to data structures.

INFO 320. Business Intelligence and Data Mining. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301*, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using information systems tools and quantitative techniques. Focus is on extraction, translation and loading of relevant business and external data, quantitative analysis and presentation of findings. Typical problem situations involve suggested productivity improvements, revenue enhancement opportunities and marketing. *Formerly MGMT 301.

INFO 350. Programming. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 202, INFO 250, CMSC 245 or CMSC 255; and MATH 211, both with a minimum grade of C. Object-oriented programming and algorithmic design are introduced using C# and the .NET Framework. Emphasizes building business applications using the .NET Framework Class Library and the components, events and message handling therein. Intermediate Web application development is also covered. Students cannot receive credit for both CMSC 256 and INFO 350.

INFO 360. Business Information Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Provides an understanding of the importance of computer-based information in the success of the firm. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support and management information systems.

INFO 361. Systems Analysis and Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines the concepts, tools and techniques used to develop and support computer-based information systems. Systems planning, analysis, design and implementation are covered. Behavioral and model building aspects of systems development are emphasized throughout.

INFO 364. Database Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 202, INFO 250, CMSC 245 or CMSC 255; and MATH 211, both with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Designed to prepare students for development of systems involving databases and database management.

INFO 370. Fundamentals of Data Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 202, INFO 250, CMSC 245 or CMSC 255; and MATH 211, both with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Computer networks and data communications. Provides an understanding of the underlying concepts of computer networking. Emphasis is placed on terminology, techniques and issues in networking systems.

INFO 450. Advanced Programming. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 350 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The course covers advanced programming concepts. Topics include pointers, advanced GUI components and the building of multithreaded applications containing reusable components based upon design patterns and advanced data structures. Students cannot receive credit for both CMSC 245/246 and INFO 450.

INFO 451. Advanced Technology for E-business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: grades of C or better in INFO 350 and 364, and junior standing. Focuses on the technical aspects of developing e-business systems using Web services and Web server controls to build visually interactive and highly responsive Web applications. Students will learn how various XML APIs (processing, messaging and distributed registries) are used under the umbrella of Web services to support the sharing of data and processes for e-business applications. The course will integrate the students' prior knowledge of client-side GUI development with server-side controls, components and behaviors in a multitiered environment that includes database connectivity.

INFO 461. Information Systems Planning and Project Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 361. Concentrated study of planning methods and techniques required for defining, planning, integrating and implementing information technology projects consistent with the organizational strategic plan and mission.

INFO 463. Business Process Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 361. This course is restricted to students who have completed at least 54 credit hours (junior standing). A survey of legacy system re-engineering technologies in which the student becomes familiar with a variety of tools used in practice and has the opportunity to develop applications using these tools under supervision. Selection of technologies is determined each semester.

INFO 465. Projects in Information Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 350, 364, 370 and 461. The student's behavioral and technical skills developed in listed prerequisite courses are challenged by participating in a team systems development project. Appropriate computer-assisted software engineering tools are used throughout the project, from requirement specification to implementation and testing.

INFO 468. Information Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 361 and INFO 364. This course is restricted to students who have completed at least 54 credit hours (junior standing). A study of information engineering as a model-based, data-centric approach to integrating organizational strategic planning with enterprise information systems development. Involves readings, group discussion and case studies.

INFO 472. Infrastructure Services. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 370 and junior standing. Concepts and principles related to administering and securing information and communication technologies. Topics include management of infrastructure, hosts, applications and network security.

INFO 474. Advanced Networking and Security. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 370 and junior standing. Detailed coverage of the TCP/IP protocol suite and its application to internetworking. Emphasis is placed on security, vulnerabilities and controls.

INFO 481. Information Technology Auditing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to information systems majors who have completed 54 credit hours (junior standing), or students may enroll with permission of the department. The course teaches the role and objectives of information technology audits and the processes that are necessary to properly conduct an IT audit. Case studies introduce students to the process of interpreting audit evidence.

INFO 482. Introduction to Enterprise Resource Planning Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to majors in the School of Business who have completed 54 credit hours (junior standing). This course allows students to develop an appreciation of the impact of enterprise resource planning systems on businesses and to understand the issues involved in the design, implementation and maintenance of these systems. Students also develop practical skills in the use of a commercial enterprise resource planning system.

INFO 491. Topics in Information Systems. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Maximum of 3 credits per course; maximum total of 6 credits for all topics courses. Enrollment restricted to students with junior standing. An in-depth study of a selected business topic, to be announced in advance.

INFO 492. Independent Study in Information Systems. 1-3 Hours.

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

INFO 493. Internship in Information Systems. 3 Hours.

Semester course; 3 field experience hours. 3 credits. Enrollment restricted to students with senior standing and permission of department chair prior to or during advance registration of the semester of credit. Students taking this course must have earned 12 hours of course credit in IS courses at the 300-level or above. Involves students in a meaningful work experience, typically 20 hours per week, in a setting appropriate to the information systems major.

Management (MGMT)**MGMT 291. Topics in Management. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

MGMT 303. Creativity and Ideation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed a minimum of 54 credits (junior standing). Course explores the individual, social and institutional contexts for creativity and ideation. Students will examine four specific concepts in support of exploration in these areas: knowledge, curiosity, creativity and ideation.

MGMT 310. Managing People in Organizations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credits (junior standing). Introduces students to the management of people in organizations, focusing on the managerial skills, knowledge and activities needed for a successful business operation. Topics include planning, organizing, staffing and leading; effectively utilizing human capital to achieve an organization's objectives in today's competitive environment.

MGMT 313. Entrepreneurial Finance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311 or permission of instructor. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

MGMT 319. Leadership. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 310. This course is restricted to students who have completed at least 54 credit hours (junior standing). Coverage of the major approaches to leadership considering individual, team, organizational and cultural perspectives. Emphasis on self-assessment and on historical and contemporary leadership cases.

MGMT 321. Survey of Entrepreneurship. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Underlying concepts in entrepreneurship; the importance of entrepreneurs and the problems they face; entrepreneur characteristics and competencies; what makes an idea entrepreneurial; managing relations, ethics and sustainability; opportunity recognition, critical thinking and emphasis on innovative concept development; detailed concept feasibility analysis.

MGMT 331. Human Resource Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed a minimum of 54 credit hours (junior standing). Introduces students to the role of human resource management in attracting and retaining a productive workforce. Includes human resource planning, recruitment and selection; employee diversity and development; performance appraisal and reward systems; labor and employee relations; and public policy related to HRM practices.

MGMT 332. Staffing Organizations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. Planning and executing a strategy to attract, select, hire and retain the talent needed to support the organization's mission and enhance performance.

MGMT 333. Compensation Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. The design and implementation of compensation and reward systems that both support an organization's strategy and enhance organizational effectiveness.

MGMT 389. Managerial Skills Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 310. A practicum in the development of personal, interpersonal and team-management skills as applied to leadership and teamwork.

MGMT 403. Human Resource Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Designed to improve qualifications of those seeking employment in the human resources field. Focuses on human resource development and organization development and their relationship to human resource management.

MGMT 405. Negotiation, Influence and Conflict Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed a minimum of 54 credit hours (junior standing). Designed to develop negotiation and conflict management skills as well as an understanding of negotiation and influence theories and frameworks. Considerable emphasis is placed on experiential negotiation exercises and role-playing.

MGMT 418. International Management. 3 Hours.

3 lecture hours. 3 credits. Prerequisite: junior standing. The study of the environment of international business, ethics and social responsibility in international settings, culture and its effect on behavior and management practice, and the strategies and management practices of firms engaged in international activities. Aims to provide students with the knowledge, skills and sensitivities needed to be effective managers in the international business environment. Crosslisted as: INTL 418.

MGMT 419. Doing Business in Europe. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing and permission of instructor. Designed primarily as a core integrative course for students enrolled in the Certificate in International Management Studies, but other students are welcome. The course has three goals: a) integration of foreign languages, European studies and international management; b) infusion of other business areas relevant to doing business in Europe (such as international marketing, finance law and economics); and c) the development of cultural sensitivity and social responsibility. The course will be organized as a series of seminars with faculty and other speakers from the above disciplines. Crosslisted as: INTL 419.

MGMT 423. Social Entrepreneurship and Innovation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to students who have completed at least 54 credit hours (junior standing). An advanced management course in promoting societal good through entrepreneurial activities. Students will learn the various forms of entrepreneurship that benefit society, developing an understanding of the many contexts in which such entrepreneurship occurs and its impact on society. Students will identify issues of societal/environmental marginalization, ideate potential solutions, generate in-depth research relevant to course projects and take part in presentations regarding their findings and the development of a socially conscious venture.

MGMT 431. Strategic Human Resource Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 332 or MGMT 333, with a minimum grade of C. Enrollment restricted to students with a minimum of 85 credit hours (senior standing). Design and execution of human resource management strategies to achieve a competitive advantage; proper internal alignment of activities within the HRM function as well as external alignment of HRM activities with organizational goals, strategy and competitive environment.

MGMT 434. Strategic Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 310; MKTG 301; FIRE 311; and SCMA 301, STAT 210 or STAT 212. This course is restricted to business majors with senior standing. Integrative course to analyze policy issues at the overall management-level involving functional areas such as production, finance and marketing, in context with the economic, political and social environment.

MGMT 435. New Venture Strategy and Initiation. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: MGMT 321; completion of MGMT 435 to enroll in MGMT 436. First semester: provides students with an integrated strategic analysis of entrepreneurial firms and how they establish competitive advantage. Second semester: engages students in intensive development of a comprehensive business plan using knowledge and skills from MGMT 435. Students should take MGMT 436 immediately following MGMT 435.

MGMT 436. New Venture Strategy and Initiation. 3 Hours.

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: MGMT 321; completion of MGMT 435 to enroll in MGMT 436. First semester: provides students with an integrated strategic analysis of entrepreneurial firms and how they establish competitive advantage. Second semester: engages students in intensive development of a comprehensive business plan using knowledge and skills from MGMT 435. Students should take MGMT 436 immediately following MGMT 435.

MGMT 446. International Human Resource Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331, INTL/MGMT 418 or ECON/INTL 329. Covers the application of human resource management activities in an international context. Highlights similarities and differences with domestic methods; current practices in the selection, development, compensation and maintenance of parent-country, host-country and third-country nationals; and the impact of regulatory and cultural differences between countries. Crosslisted as: INTL 446.

MGMT 447. Human Resource Information Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. This course is restricted to students who have completed at least 54 credit hours (junior standing). Covers contemporary human resource information software used in the primary activities of human resource management involving recruitment, selection, performance appraisal, employee benefits, pay administration, safety and health, human resource development, job analysis, human resource planning and job structuring. Emphasis is on introducing the software and practical application through hands-on experience in the computer laboratory.

MGMT 491. Topics in Management. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

MGMT 492. Independent Study in Management. 1-3 Hours.

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

MGMT 493. Internship in Management. 3 Hours.

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

Marketing (MKTG)**MKTG 301. Marketing Principles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 26 credit hours (sophomore standing). An introduction to the activities, set of institutions and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large.

MKTG 302. Marketing and Brand Strategy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Students gain knowledge of and exposure to marketing managerial and brand strategy issues. Marketing majors should take this course in the semester immediately following the term in which they complete MKTG 301.

MKTG 310. Marketing Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301; and SCMA 301*, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Students receive an overview of the marketing research process. The course includes coverage of primary research, secondary data sources and marketing information systems. Students learn to apply research findings to marketing decisions. *Formerly MGMT 301.

MKTG 315. Buyer Behavior. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Study of the relevant psychological, sociological and anthropological variables that shape buyers' activities and motivations in household and organizational decision-making. Throughout the course, students consider the issue of why consumers behave as they do in the marketplace and the nature of their choices as individual, family and institutional buyers.

MKTG 320. International Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Designed to help students develop an understanding of international marketing policies and the differences among foreign marketing environments. Students compare and contrast domestic and international marketing and examine recent changes in the international marketing environment. Crosslisted as: INTL 320.

MKTG 325. Business-to-business Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and junior standing. This course focuses on strategy development for marketers whose customers include other businesses, the government and/or institutions. It explores the buying behavior of these organizations and highlights how the product development and management processes for such customers differ from the processes used for consumer marketing.

MKTG 330. Integrated Marketing Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). An overview of the steps required to develop an integrated marketing communications campaign. Topics include advertising, public relations, sales promotion, personal selling and direct marketing. Special emphasis is placed on the role of new technologies and interactive media.

MKTG 335. Introduction to Personal Selling. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed at least 26 credit hours (sophomore standing). Examines the fundamental nature of personal selling in the promotion mix, including the sales process and the techniques used in performing the selling function.

MKTG 340. Retail Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). A comprehensive view of retailing and an application of marketing concepts in a practical retail managerial environment. Students learn to evaluate retail firms and to identify their strengths and weaknesses.

MKTG 350. Customer and Marketing Analytics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301 with a minimum grade of C. Introduces tools to gain insights into customer interactions with brands, advertising, digital or social media marketing, and shopping or purchase contexts. Reviews data structure, analysis, synthesis and presentation techniques that aid marketing decision-making.

MKTG 430. Experiential Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301, MKTG 330 and junior standing. This course will introduce the student to topics and strategies involving brand experiences and experiential marketing tactics. Students will explore experiential marketing, a marketing strategy designed to cultivate positive brand-consumer experience through products, communication and staged brand experiences. Additional concepts to be examined include brand strategy, marketing and the five senses, event marketing, mobile marketing, ambush marketing, guerilla marketing, venues and sponsorships, sampling, premiums, technology, social media, and data collection.

MKTG 435. Selling in the Business Marketplace. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301, MKTG 335 and junior standing. This course focuses on selling strategy and tactics for sales managers and field sales representatives whose customers include other businesses, government and/or institutions. Areas of concentration include preparing for, and conducting, effective business-to-business sales calls, including prospecting, scheduling customer sales meetings, needs identification, presentation and securing new business.

MKTG 442. Services Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students develop both a theoretical and practical understanding of "the service product," including the role of customer service in retail and industrial settings. Students learn techniques for analyzing and improving service system design. Students develop an understanding of "quality" as it relates to service products, and they exercise a number of approaches for assessing and improving perceived service quality.

MKTG 445. Nonprofit Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines the relationship between marketing and organizational success in the nonprofit sector, as well as the impact of nonprofit organizations on local, national and global economies. Through real-world applications, students learn to combine marketing strategies and tactics with civic engagement, community service and corporate social responsibility. Students must complete a minimum of 20 service-learning hours with the nonprofit organization that is the focus of the course.

MKTG 448. Digital Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines Internet marketing as a necessary ingredient to successful worldwide marketing strategy. Students analyze markets using Web-based techniques for market evaluation, competitive analysis, market comparison and selection. Discussion includes comparison of e-business versus traditional business perspectives on marketing strategies and tactics. Crosslisted as: INTL 448.

MKTG 450. Product Development and Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Study of the role of marketing in developing and managing products. Essential concepts include the use of project teams for product development and the application of a new product development process. Topics include innovation, technology, listening to the voice of the customer, product design, branding, positioning and product life-cycle management.

MKTG 470. Field Project in Marketing. 3 Hours.

Semester course; 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students take part in a real-world project under faculty supervision, with the topic announced in advance. Examples include conducting a marketing research project, creating an advertising campaign, writing a marketing case study about an existing business and developing a marketing plan.

MKTG 475. Honors Seminar in Marketing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and permission of department chair. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students conduct research about major firms in the Richmond region. Chief marketing officers of these firms teach students about current marketing issues and evaluate the students' projects.

MKTG 485. Internship in Selling. 3 Hours.

Semester course; 3 field experience hours. 3 credits. Enrollment is restricted to degree-seeking students who have completed at least 54 credit hours (junior standing) while maintaining a minimum GPA of 2.5. The course provides the student an opportunity to work in a general selling capacity with a regionally based enterprise. This work experience contributes to the student's development of knowledge, skills and abilities of selling.

MKTG 491. Topics in Marketing. 1-3 Hours.

Semester course; variable hours. Variable credit, with a maximum total of 3 credits per course. For marketing majors, a maximum total of 6 credits for all topics courses. Prerequisite: MKTG 301. An in-depth study of a selected business topic, to be announced in advance.

MKTG 492. Independent Study in Marketing. 1-3 Hours.

Semester course; 1-3 credits. For marketing majors, a maximum total of 3 credits for all MKTG 492 courses. Prerequisites: MKTG 301, junior standing and permission of adviser and department chair prior to course registration. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

MKTG 493. Internship in Marketing. 3 Hours.

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

Supply Chain Management and Analytics (SCMA)**SCMA 171. Mathematical Applications for Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Pre- or corequisite: INFO 162. Mathematics equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool.

SCMA 212. Differential Calculus and Optimization for Business. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 171 or MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. Students should take SCMA 212 immediately after completing SCMA 171. Students may not receive degree credit for both SCMA 212 and MATH 200.

SCMA 301. Business Statistics I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 171*, MATH 151, BUSN 212**, MATH 200 or higher level mathematics course. Statistical methods for collection, visualization and analysis of business and economic data from populations and processes. Statistical thinking, concepts of variability, sampling, descriptive measures, contingency tables, probability and introduction to regression, correlation, confidence intervals and hypothesis testing, with implementation in spreadsheet software. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301. This course was formerly numbered MGMT 301. *Formerly MGMT 171, SCMA 171; **formerly MGMT 212, SCMA 212.

SCMA 302. Business Statistics II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 212* or MATH 200; and SCMA 301**, STAT 210 or STAT 212. Statistical methods employed in the collection and analysis of business and economic data. Continuation of statistical inference for means and variable relationships using t-tests, analysis of variance, contingency tables, regression and correlation analysis with emphasis on problem formulation and interpretation of computational results. *Formerly MGMT 212, SCMA 212; **formerly MGMT 301.

SCMA 303. Business Analytics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BUSN 212* or MATH 200; and SCMA 301**, STAT 212 or STAT 210. Descriptive analysis (Excel models and pivot tables, summary statistics, data visualization and regression analysis), predictive analysis (time series and forecasting) and prescriptive analysis (optimization models, decision trees and sensitivity analysis). *Formerly MGMT 212, SCMA 212; **formerly MGMT 301.

SCMA 320. Production/Operations Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management and quality management.

SCMA 339. Quantitative Solutions for Supply Chain Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using quantitative techniques. Focus is on applications to problems in the service and manufacturing sectors. Typical problem situations involve management of inventory, scheduling of people and processes and allocation of scarce resources.

SCMA 350. Introduction to Project Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Introductory exposure to and practice with the concepts of project management, the activities and skills of project managers, the prevalence of projects in organizations, and the value of project management skills for all managers. Students will employ project management terminology, participate in project work and engage in the appropriate technical and interpersonal processes for managing successful projects.

SCMA 386. Global Supply Chain Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Introduction to supply chains with emphasis on management, e-commerce and globalization. Topics covered include achievement of strategic fit among members of the chain; managing information system requirements; managing economies of scale, role of cycle inventory, impact of aggregation on risk and inventory; determining the optimal level of product availability, coordination and performance measurement.

SCMA 410. Logistics and Distribution Strategy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. This course provides an introduction to the principal analytical tools and methods used in supply chain management, including experience in solving relevant supply chain and logistics problems. The course content includes a heavy emphasis on the use of Microsoft Excel functions to develop modeling skills, including decision analysis, linear programming, heuristics and simulation for supply chain decision-making. Context areas for problem solving include supply chain network design, inventory management, transportation management, purchasing and demand management.

SCMA 420. Strategic Sourcing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Procurement and strategic sourcing address the processes that facilitate the structure, creation and management of value-added transactions and relationships between supplier and customer organizations in a channel, supply chain and integrated value system context.

SCMA 430. Data Management and Visualization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 303. This course is designed with the goal of equipping students with competencies in data management and visualization, with the intended product being an individual capable of developing analytically rigorous decision support tools, catered to specific managerial environments, which can be easily handed off for robust application by a range of intended users in those environments.

SCMA 439. Process Management and Quality Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Critical concepts of process management from quality management and Six Sigma; service quality; systems thinking; process improvement strategy and methods; fact-based decision-making; collection and use of data in improvement projects; introduction to data analysis tools and techniques; statistical process control.

SCMA 440. Data Mining and Forecasting. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 302 or STAT 314. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). This course introduces nonmathematical managers to the major quantitative models designed for sound demand, competitive and system forecasting in today's complex and increasingly uncertain business environment. The course is useful for multiple business disciplines, including general management, marketing and finance. Topics include game theory, Markov processes, statistical quality control, exponential smoothing and seasonally adjusted trend analysis. Emphasis is placed on a general understanding of theory, mechanics, application potential, available software packages and templates.

SCMA 491. Topics in Supply Chain Management and Analytics. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Students are restricted to a maximum total of 6 credits for all topics courses. Prerequisite: junior standing. An in-depth study of a selected business topic related to the disciplines in supply chain management and analytics, to be announced in advance.

SCMA 492. Independent Study in Supply Chain Management and Analytics. 1-3 Hours.

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

SCMA 493. Internship in Supply Chain Management and Analytics. 3 Hours.

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major.

School of Dentistry

Dental Hygiene (DENH)

DENH 301. Dental Hygiene Theory I. 5 Hours.

Semester course; 3 lecture and 6 laboratory/clinical hours. 5 credits. Designed to familiarize the student with the scope, role and responsibilities of the dental hygiene profession. Topics include an introduction to the educational and therapeutic services as well as the philosophy of preventive oral health and its relevance to the practice of dental hygiene. Also introduces the clinical knowledge and skills needed to perform fundamental clinical dental hygiene procedures, instrumentation, patient education and preventive services.

DENH 302. Dental Hygiene Theory II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Continuation of DENH 301. Designed to provide the student with knowledge and skills necessary to provide patient care and includes instruction in some more advanced dental hygiene skills, including dental hygiene diagnosis, treatment planning, oral signs of abuse/neglect, topical medicaments and use of sonic and ultrasonic instrumentation.

DENH 307. Research Methods and Study Designs. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Designed to guide dental hygiene students in becoming competent in the use of scientific literature as a part of lifelong learning and evidence-based decision-making in patient care. Covers foundational materials in research design and biostatistics, including the development of testable hypotheses, data collection, data summary, and evaluation and interpretation of data found in scientific literature. Students will critique scientific literature from peer-reviewed journals and participate in reflection of current literature on assessment of patients with special needs. Students will also take part in an online collaborative investigator training initiative for protecting human subjects in research.

DENH 312. Community Oral Health Promotion. 2 Hours.

Semester course; 2 lecture contact hours. 2 credits. Prerequisite: DENH 301. Enrollment restricted to students in the dental hygiene program. Introduces preventive oral health strategies, methods, materials and principles of instruction in health education and communication. Emphasizes oral health promotion as related to individual patients, community groups as well as professional peer-group presentations. Introduction to evidence-based decision-making in dental hygiene practice.

DENH 327. Clinical Dental Hygiene I. 4 Hours.

Semester course; 1 lecture and 3 clinical hours. 4 credits. Prerequisite: DENH 301. The clinical practicum introduces dental hygiene services as part of a comprehensive care model within the School of Dentistry and reinforces the knowledge and clinical skills learned in the prerequisite course. Students apply basic instrumentation and patient treatment skills in a clinical setting. Weekly seminars provide opportunity for students to problem solve and critically discuss and assess clinical experiences.

DENH 337. Clinical Service Learning. 2 Hours.

Semester course; 2 clinical hours. 2 credits. Prerequisite: DENH 327. Students will participate in an organized service activity that meets community-identified needs. Students are assigned rotations in clinical practice settings in underserved areas, where they are exposed to patients of varied ethnic, socioeconomic and demographic backgrounds, as well as special patient populations not typically encountered in the School of Dentistry clinics. While continuing clinical education, students have the opportunity to make oral health care more accessible to marginalized groups. Throughout this unique learning experience, students are exposed to the benefits of potential practice in public health dentistry. Students will reflect on the service activity to increase understanding and application of course content and to enhance a sense of civic responsibility. Graded as pass/fail.

DENH 342. Nutrition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to provide students with an overview of the chemistry of the major nutrients as well as provide a practical approach to the concepts of nutrition. Emphasis will be placed on developing positive preventive health behaviors and providing nutritional education to dental patients in a clinical setting. The interrelationships of diet, nutrition and dental and systemic diseases will be discussed along with current food trends, consumer aspects of food choices and basic nutrition principles. A general review of dietary supplements also will be provided.

DENH 401. Dental Hygiene Theory III. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Dental specialty content is presented: concepts and techniques in specialty areas that will enable the dental hygienist to consider implications for dental hygiene treatment planning with relation to periodontics, orthodontics, endodontics, preventive, cosmetic and restorative dentistry, pain control, oral surgery, prosthodontics, pediatric dentistry and implantology. Through case scenarios students develop treatment plans with regard to the dental hygiene process of care. Students discuss patient education needed for each phase of care appropriate for the informed consent of the patient.

DENH 402. Dental Hygiene Theory IV. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course is designed to present the principles of dental practice, including dental team management strategies, business office management, increasing use of computers in dentistry, OSHA and its impact on practice management, insurance coverage for dental care, and employment opportunities and career options.

DENH 407. Research Methods and Study Designs. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Designed to guide dental hygiene students in becoming competent in the use of scientific literature as a part of lifelong learning and evidence-based decision-making in patient care. Covers foundational materials in research design and biostatistics, including the development of testable hypotheses, data collection, data summary, and evaluation and interpretation of data found in scientific literature. Students will critique scientific literature from peer-reviewed journals and participate in reflection of current literature on assessment of patients with special needs. Students will also take part in an online Collaborative Investigator Training Initiative for protecting human subjects in research.

DENH 411. Introduction to Public Health. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This hybrid course is intended to provide the dental hygiene student with an overview of the broad field of public health. Topics include the sciences of public health, the controversial nature of public health, powers and responsibilities of the government, social and behavioral factors in health, environmental issues in public health, medical care and public health, and public health challenges in the upcoming century. The course serves as a foundation for DENH 412. The course will also provide students with experiences that foster positive attitudes and behaviors regarding their responsibility to care for underserved populations, thereby providing insights on the impact of social and economic factors on dental health. Field experiences place emphasis on special populations, including elementary school children; geriatric, institutionalized and hospitalized clients; and individuals with mental and/or physical disabilities. The course and its field experiences will prepare the dental hygienist for the role of dental public health practitioner, educator and consultant, as well as a resource person in community settings.

DENH 412. Community Dental Health. 2 Hours.

Semester course; 1 lecture and 3 clinical/service-learning project hours. 2 credits. This hybrid course is designed to provide dental hygiene students with an introduction and overview of basic concepts of dental public health, community dental health education and community program planning. Course topics include oral health trends, dental indices, water fluoridation, prevention and control of oral diseases in a community, and community dental health programs. Students become involved in the application of concepts such as program assessment, design, implementation and evaluation. This course will prepare the dental hygienist for the role of dental public health practitioner, educator, and consultant and resource person in community settings. Field experience is designed to prepare students to function in a variety of community health settings. Emphasis on special populations of elementary school children, geriatric, institutionalized, hospitalized and individuals with mental and/or physical disabilities.

DENH 422. Current Issues, the Law and Ethics. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This online course is designed to explore the ethics, jurisprudence and principles of dental hygiene practice. Students explore ethical issues and dilemmas in dental hygiene and health care delivery. This course strives to provide students with the foundations of ethical reasoning and decision-making in practices. The course fosters professional development and an understanding of the legal and ethical aspects of oral health care.

DENH 437. Clinical Dental Hygiene II. 5 Hours.

Semester course; 1 lecture and 4 clinical hours (3 clinical hours per credit). 5 credits. Prerequisite: DENH 327. A continuation of the clinical practicum; seminars and clinical experiences continue to prepare students to provide oral health care services in the private and public sector. Students participate in comprehensive care clinical experiences within the School of Dentistry. Advanced dental hygiene procedures are initiated and patient assessment, management skills and self-assessment are emphasized. Skill development in dental hygiene procedures continues; patient management skills as well as decision-making and problem-solving in relation to patient assessment, treatment planning and evaluation are emphasized. Course sequence provides the student with the opportunity to use and further enhance the knowledge and skills of dental hygiene practice and procedures in a clinical model that emphasizes comprehensive patient care and a foundation for transference of those skills to the work environment in the private and public sector. Note: A grade of PR is required in this course for continuation in DENH 447.

DENH 447. Clinical Dental Hygiene III. 5 Hours.

Semester course; 1 lecture and 4 clinical hours (3 clinical hours per credit). 5 credits. Prerequisite: DENH 437 with a grade of PR. A continuation of the clinical practicum; seminars and clinical experiences continue to prepare students to provide oral health care services in the private and public sector. Students participate in comprehensive care clinical experiences within the School of Dentistry. Advanced dental hygiene procedures are initiated and patient assessment, management skills and self-assessment are emphasized. Skill development in dental hygiene procedures continues; patient management skills as well as decision-making and problem-solving in relation to patient assessment, treatment planning and evaluation are emphasized. Course sequence provides the student with the opportunity to use and further enhance the knowledge and skills of dental hygiene practice and procedures in a clinical model that emphasizes comprehensive patient care and a foundation for transference of those skills to the work environment in the private and public sector.

DENH 449. Clinics in Dental Hygiene. 1-5 Hours.

Semester course; 1-3 credits. Clinical/laboratory experiences offering the opportunity to use and further develop the knowledge and skills of dental hygiene practice.

DENH 450. Independent Study. 1-5 Hours.

Semester course; 1-5 credits. Independent study projects planned to meet the learning objectives of the student.

DENH 457. Clinical Service-learning. 1 Hour.

Continuous course; 32 clinical sessions. 1 credit. Prerequisites: DENH 302, 327 and 342. Enrollment restricted to dental hygiene students only. Course must be repeated to fulfil requirements. (Requirement is for 32 clinical session over two semesters. Students will repeat for 2 credits.) This is a course-based, credit-bearing educational experience in which students participate in an organized service activity that meets community-identified needs. Students are assigned rotations in clinical practice settings in underserved areas, in which they are exposed to patients of varied ethnic, socioeconomic and demographic backgrounds, as well as special patient populations not typically encountered in the School of Dentistry clinics. While continuing clinical education, students have the opportunity to make oral health care more accessible to marginalized groups. Throughout this unique learning experience, students are exposed to the potential benefits of practice in public health dentistry. Students will reflect on the service activity to increase understanding and application of course content and to enhance a sense of civic responsibility. Students will also provide guided reflections on designated reading assignments. Graded P/F.

DENH 460. Individual Plan of Study. 1-6 Hours.

Semester course; variable hours. 1-6 credits. This course is designed on an individual basis to accommodate remediation of a failed course. The course director will design course material to include self-paced learning, assignments, tests and clinic or lab activities necessary to equal the failed course content. Graded as pass/fail.

DENH 477. Special Topics in Dental Hygiene. 1-3 Hours.

Semester course; 1-3 credits. Designed around the interests of students, faculty expertise and availability of educational resources. Format may include intensive mini-courses or workshops.

Dental Hygiene Biomedical Science (DHBS)**DHBS 301. Head and Neck Anatomy for Dental Hygienists. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This four-week course provides an overview of head and neck anatomy, including the osteological, nervous, muscular, vascular and visceral structures of the human head and neck. Lecture-based instruction will be supplemented by collaborative/team-based learning exercises (with functional and clinical correlations of anatomical concepts), online self-study learning modules (with self-assessment questions) and brief laboratory exercises (for the study of osteological and/or gross anatomical specimens) that provide hands-on exposure to these major anatomical features.

DHBS 302. Microscopic Anatomy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. A lecture course in the microscopic anatomy of the cells and tissues relevant to the oral cavity. This course is designed to provide a basic understanding of the microscopic anatomy of the human body, with emphasis placed on structures contained in the oral cavity. Normal microscopic anatomy forms the base for understanding the organization and function of the tooth and oral structures as well as the base on which pathological changes occur.

DHBS 365. Infection and Immunity. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Course provides a general introduction to immunology and microbiology. Students will gain an appreciation for basic components and mechanisms that are involved in immunity, as well as specific health problems associated with immune dysfunction. Additionally, students will become familiar with microbial pathogens, including bacteria, fungi, parasites and viruses, the infectious diseases associated with these pathogens, and methods of control. Specific attention will be given to oral microbiology, immunity and pathologies.

DHBS 441. Pharmacology and Pain Control for Dental Hygiene. 4 Hours.

Semester course; 4 lecture hours. 4 credits. A didactic course designed to emphasize the principles of pharmacology and pain control, drug actions and uses, and adverse effects to provide the rationale for the effective and safe use of drugs in dental hygiene.

General Practice (GENP)**GENP 302. Dental Materials. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Provides the scientific foundation for understanding the factors guiding the use of biomaterials in dentistry as they relate to the practice of dental hygiene. Dental and material science concepts are defined and their relationships developed to establish an understanding of the influence of material properties and manipulation on the longevity and success of treatment. Dental materials are discussed in terms of their physical, mechanical, chemical, biological and esthetic properties. Factors that influence tooth sensitivity, caries prevention, tissue irritation, longevity of restoration, dental bonding, materials selection and allergic reactions are emphasized. Primary dental materials will be discussed in relation to their properties and manipulation with an approach to aid in patient education and to recognize adverse affects on the patient's health from improper manipulation or placement failures.

GENP 311. Oral Anatomy and Occlusion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to admitted students in the dental hygiene degree program. This course is designed to develop the student's knowledge of the morphology and anatomical features of the human adult dentition. It is intended to provide students with a fundamental working knowledge of the internal and external morphology of the human adult dentition in order to effectively communicate using appropriate anatomical terms related to the human dentition. This course is intended to facilitate additional later course work involving diagnosis and treatment of normal and pathological conditions. This didactic course offers limited hands-on and self-study sessions.

Oral Diagnostic Sciences (ORPT)**ORPT 301. Dental Radiology. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. This is an introductory course that covers radiation physics, radiation biology and geometrical principles as applied to radiology and radiographic anatomy. Students will study the radiographic anatomy of the head and neck and exposure and processing techniques for diagnostic radiographic examinations of the head and neck. Areas are covered with the intent to link these principles to the knowledge needed in clinical practice.

ORPT 324. Oral Pathology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide the student with a body of basic information on general and organ specific pathology. The purpose of the course is to enable the student to better recognize and interpret symptoms, signs and pathologic characteristics of organ, systemic and oral disease that will be encountered in practice. Included is study relating to the etiology, pathogenesis, prognosis, prevention and treatment of oral disease. Students will study the development, reactive and neoplastic conditions of the oral cavity with emphasis placed on the more commonly occurring diseases.

Oral Surgery (ORSG)**ORSG 431. Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. This course provides students with the knowledge and skills to provide safe and effective care for medically compromised patients. Instruction in physical evaluation provides the student with sufficient knowledge, judgment and skill to recognize normal findings as well as significant deviations from the normal. Didactic material includes a study of disease processes that affect the major organ systems of the body. In addition, students will have the opportunity to recognize and manage medical emergencies that can occur during dental treatment. Care for individuals with physical and mental disabilities will be presented with emphasis on the management of this special population in the general dental office.

Periodontics (PERI)**PERI 326. Periodontics I. 1 Hour.**

16 lecture, 2 seminar and 2 clinical hours. 1 credit. Corequisites: ANAT 302, BIOL 209 or equivalent, MICR 365. This course introduces the fundamental concepts of periodontal disease necessary for proper patient assessment, diagnosis, prognosis and treatment planning. This course stresses the rationale and technical aspects of examination of the periodontal patient. Emphasis will be placed on the etiology of periodontal diseases, rationale and outcomes of treatment. This course features small-group exercises in lectures, seminars and clinical patient-based instruction.

PERI 329. Periodontics II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Second in the series of periodontics courses for dental hygiene students, this course provides the scientific basis to understand the pathology and etiological factors of periodontal diseases. In addition, topics related to periodontal therapy not provided elsewhere in the dental hygiene curriculum are addressed, including periodontal risk assessment and advanced periodontal therapy procedures.

School of Education**Adult Education (ADLT)****ADLT 300. Introduction to Human and Organizational Development. 3 Hours.**

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course is designed to provide students with an overview of the basic theories and concepts of organizational development and human resource development. Students will explore core aspects of the field of HRD including its foundations, basic theories, mission and goals, areas of emphasis, and issues and trends in the field. Students will also explore the definition and history of OD, fundamental theories, and the key steps of the OD process.

ADLT 301. Adult Learning Theory and Practice. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course provides an overview of learning and development in adulthood, beginning with the historical development of the field and its philosophical underpinnings. Concepts, models, theories and research in the field of adult learning will be addressed, with an emphasis on practical application of adult learning principles. The psychological and social aspects of adult learning are also addressed, as well as the effects of age on learning and motivations for learning.

ADLT 302. Basics of Instructional Design for Adult Learners. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. Instructional design has been described as the process used to design, implement and evaluate learning solutions for adults. This course provides an overview of the instructional design process, including how to assess the needs of an organization, build a learning product that relates to the identified needs and how to evaluate how well the learning solution addresses those needs. Modern instructional design models and frameworks will be discussed, with an emphasis on practical application. This course will be especially helpful for those that work, or plan to work, to support and improve the learning in their organizations.

ADLT 303. Facilitation Skills for Human and Organizational Development. 2 Hours.

Semester course; 2 lecture hours (delivered in hybrid format). 2 credits. This course provides an overview of the knowledge and skills necessary to facilitate and deliver professional presentations and group meetings in various settings. Participants will learn the basics of workshop and group facilitation, including how to plan for the session and how to select appropriate support materials. Participants will also identify effective methods for the facilitation of workshops, in-person meetings and virtual meetings. Instruction will involve dynamic group exercises, experiential role-plays and mini lectures, with a key emphasis on practicing and experiencing facilitation in a variety of settings.

ADLT 304. Designing Online Learning for Adult Learners. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. Learning in an online environment is different when compared to learning in a face-to-face classroom environment. Online education can pose a variety of special challenges for both the students and the instructors, but it can also provide completely different opportunities to engage, collaborate and learn. This course is designed to provide an overview of how to design instruction for the unique needs of adult online learners. Participants will examine online teaching strategies and instructional design practices, as well as discover methods that can lead to online learning success, while developing an appreciation for how adult learning theory can inform effective online instruction.

ADLT 400. Developing Intercultural Competencies in the Workplace: Diversity, Inclusion and Equity. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course is designed to explore the intersection of personal and professional identity as it relates to workplace culture, climate and working relationships. Ultimately, it seeks to aid in the development and understanding of concepts and theories that underpin people relations in professional spaces. Throughout the course students are exposed to various theories and frameworks that situate social identity within larger social structures using the lens of sociological and psychological constructs. In an effort to enhance this understanding, students can expect to explore concepts and theories such as cultural competence, feedback, social cognitive career theory, organizational culture and social identity theory. Additionally, students will begin to contextualize prejudice and oppression and consider how they have operated historically in the workplace and continue to manifest within various social systems. The course intentionally focuses on issues of diversity, inclusion, cultural competence and equity. It is designed to prepare students to be knowledgeable of biases based on social identities (race, ethnicity, culture, religion, age, sex, sexual orientation, social and economic status, political ideology, ability status, etc.) and how each of these contributes to experiences in the workplace.

ADLT 401. Organizational Development and Change. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course offers a practical and realistic approach to the study of organizational development from the standpoint of its relationship to an overall program of change. While it introduces theoretical and historical foundations of the field, it uses a conceptual framework for understanding the relevant issues in OD coupled with an experiential learning approach which focuses on the development of interpersonal skills that can be applied to life and future job situations. Students will be able to readily experience OD through the use of concepts, theories, illustrations and company examples that show how OD is applied. By engaging in this deeper involvement in the learning process, a lasting impact and/or meaning should be produced, which will result in improved skill and performance.

ADLT 402. How Adults Learn. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Overview of the adult as a learner. Topics include how and what adults learn, why adults participate in learning and major barriers to learning for adults. Implications for teachers/trainers of adults are explored.

ADLT 404. Team Learning and Development. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course will explore basic issues and dilemmas fundamental to all groups, such as leadership, mission, goals, group member roles, stages of group development and issues in team performance. The course provides opportunities for learners to examine personal roles and contributions to groups through team assignments. Through an examination of group theory, models and practices, students will explore the nature of intragroup and intergroup behavior, along with the often unconscious processes that occur in the group-as-a-whole.

ADLT 405. Project Management in Learning and Development. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course focuses on a holistic and realistic sociotechnical view of project management, meaning that it encompasses both the technical and sociocultural dimensions of project management and how they interact to determine the fate of projects. It is framed through the lens of application for the learning and development field where emphasis is not only on how the management process works, but also on why it works. Throughout this course, students will learn practical techniques for rolling out performance improvement solutions through learning and development that solve a business problem. This course will also give a comprehensive and integrative understanding of the project management process which will be useful for those at any level of an organization assigned to work on projects.

ADLT 406. Consulting Skills in Adult Learning Environments. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course is an introduction to the concepts, methods and skills required for effective process consultation, or helping, in a variety of adult learning environments including for-profit and nonprofit organizations, higher education, government and other community-based settings in which the adult educator is attempting to effect change. As such, this is a course in developing influencing skills. Implicit in the process consultation model is the assumption that all organizational problems are problems involving human interactions. No matter what technical, financial or structural problems are involved, humans are always involved in managing and implementing the solutions proposed for change strategies. Therefore, understanding human processes and the necessary requirements for change to occur are essential aspects of consulting.

ADLT 490. Internship in Human and Organizational Development. 3 Hours.

Semester course; 3 field experience hours. 3 credits. Enrollment is restricted to student who have completed a minimum of 21 hours of 300-level ADLT courses course work from the B.A. in Human and Organizational Development core and with approval of the adviser. This course should be taken during the senior year of the program, or after 21 hours of study within the major, to ensure students have the background and experience to be successful during the internship. This program is designed to offer experiential learning activities in an off-campus environment. Ideal activities for an internship experience provide the student with an opportunity to explore human resource development career interests, while making lived connections between academic theory and practical application in a work environment. Proposed internship activities must first be discussed and approved by the academic adviser, and then completed under the guidance of an on-site supervisor and the faculty sponsor of this course. A minimum of 125 clock hours of learning activities are required.

Early Childhood Special Education**ECSE 201. Infants and Young Children With Disabilities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course focuses on the foundations for early intervention and education, with emphasis on inclusive environments, typical and atypical development, family and community contexts for development, professional standards and current policy issues.

ECSE 202. Social-Emotional Development in Early Childhood. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECSE 201. This course examines typical and atypical social-emotional development of young children, as well as risk factors impacting social-emotional development. Students learn techniques for supporting positive behavior (to prevent inappropriate behavior) and strategies for building children's social competence.

ECSE 250. Infant/Toddler Fieldwork. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Prerequisite: ECSE 201. Corequisite: ECSE 302. Enrollment is restricted to students in the B.S.Ed. in Special Education and Teaching with a concentration in early childhood program with a minimum of 30 credit hours (sophomore, junior or senior standing). This field-based course provides an in-depth experience in working with infants and toddlers with disabilities and their families. Students may be placed in settings that provide home-based or community-based services.

ECSE 301. Developmental Assessment for Young Children. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SEDP 401 and STAT 206. Corequisites: EDUS 304 and TEDU 466. The purpose of this course is to equip early childhood professionals with strong foundational knowledge and application skills in screening and assessment of young children birth through age 8 in inclusive settings. The focus of the course is to introduce formal and informal developmental assessment through a variety of formats and approaches. Students will also learn structured and unstructured observations of young children with or without disabilities in inclusive settings. Survey, review and critique of standardized and non-standardized tests as well as the use of test data in planning instruction will be covered. This course provides experiences to increase awareness of, and knowledge about, a variety of assessment procedures appropriate for use with children birth through age 8. Students completing the course will be prepared to make professional decisions regarding the screening, assessment and ongoing evaluation of typically developing children and children with or at risk for disabilities.

ECSE 302. Early Intervention for Infants and Toddlers With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECSE 201. Enrollment is restricted to students with a minimum of 30 hours (sophomore, junior or senior standing). This infant-toddler early intervention class focuses on the provision of family-centered services as discussed in Part C of the Individuals with Disabilities Education Act. Students learn various relationship-based approaches for providing services that support the development of very young children with disabilities and their families.

ECSE 303. Behavior Support in Early Childhood Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECSE 201 and ECSE 202. Enrollment is restricted to students with a minimum of 30 hours (sophomore, junior or senior standing). This course will provide an introduction to theoretical models, research and strategies for supporting positive behaviors and reducing challenging behaviors of young children. Emphasis is on developing, implementing and/or structuring environments and interventions to encourage adaptive behaviors in young children. Course content focuses on conducting formal and informal assessments of behavior and environments to individualize and implement strategies to support the growth and development of individuals with challenging behavior.

ECSE 304. Communication and Language Development in Early Childhood. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECSE 201. Enrollment is restricted to students with a minimum of 30 hours (sophomore, junior or senior standing). This course emphasizes how children learn to communicate and how to facilitate communication development. The course includes examination of language development, language differences and disorders, language facilitation, and relationship of language to literacy. Course content and assignments include information about evidence-based practices and promote critical reflection and problem-solving skills.

ECSE 350. Preschool Fieldwork. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Prerequisites: ECSE 201 and ECSE 250. Corequisite: ECSE 410. Enrollment is restricted to students in the B.S.Ed. in Special Education and Teaching with a concentration in early childhood program with a minimum of 60 credit hours (junior or senior standing). This field-based course provides an in-depth experience in working with preschool-aged children with disabilities. Students may be placed in school- or community-based settings.

ECSE 351. Topics in Early Childhood Special Education. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. A course on selected topics in early childhood special education. Generally, the content will relate to infant and toddler development, parent-child relationships, and strategies to support young children with or at-risk for disabilities and their families.

ECSE 401. Medical Aspects of Early Childhood Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECSE 201. Enrollment is restricted to students with a minimum of 60 credit hours (junior or senior standing). This course focuses on the nature and characteristics of major disabling and at-risk conditions for infants and young children. Emphasis is given to the medical aspects of young children with disabilities and the management of neurodevelopmental and motor disabilities. Specific strategies for positioning and handling, facilitating movement, and developing self-care skills are provided. Review of adaptive equipment and its safe use, and selection and implementation of appropriate assistive technology will be covered.

ECSE 410. Play-based Instruction for Inclusive Settings. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECSE 301, TEDU 411 and TEDU 414. Corequisites: TEDU 410, TEDU 416 and TEDU 490. This course is designed to introduce students to the sources, concepts, theory and integrated approaches to play-based instruction for young children with or without disabilities from diverse backgrounds, and including school, home and community settings. Young children's development and learning are viewed as integral components of play. Various approaches to formal and informal play will be addressed through a hybrid format of course delivery that includes face-to-face lectures, online discussions and reflections, onsite observations, and case-based inquiries. This course particularly values the critical role of families in child development, therefore emphasizing family involvement in play-based instructions across all settings.

ECSE 450. ECSE Consultation/Itinerant Fieldwork. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Prerequisites: ECSE 201, ECSE 250 and ECSE 350. Corequisite: SEDP 405. Enrollment is restricted to students in the B.S.Ed. in Special Education and Teaching with a concentration in early childhood program with a minimum of 60 credit hours (junior or senior standing). This field-based course provides an in-depth experience in providing consultation or itinerant services for young children with disabilities. Students may be placed in school- or community-based settings.

ECSE 499. Student Teaching in Early Intervention/Early Childhood Special Education. 6 Hours.

Semester course; 6 field experience hours. 6 credits. Prerequisites: ECSE 250, ECSE 350 and ECSE 450. Corequisites: SEDP 415 and SEDP 420. Enrollment is restricted to students in the B.S.Ed. in Special Education and Teaching with a concentration in early childhood program with a minimum of 90 credit hours (senior standing). The student teaching experience is designed to provide in-depth practical experience within a school, community-based program serving young children (birth to age 5) and their families, from a variety of cultural backgrounds, who are at risk for or have developmental disabilities. Through readings, community-based learning and face-to-face and online collaboration, the student will gain an understanding of the early intervention/early childhood special education requirements and practices. To demonstrate their abilities to critically reflect on their effectiveness, students will demonstrate problem-solving and critical-thinking skills as they apply the competencies gained through course work within the student teaching experience. These competencies are based on DEC-CEC standards and include participation in the assessment, planning and implementation of intervention programs; collaboration on an interdisciplinary team; use of family-centered principles; and development of professional relationships with families and other professionals in the student teaching setting.

Educational Studies (EDUS)**EDUS 101. Teacher Cadet Program. 3 Hours.**

Semester course; 3 hours. 3 credits. Open only to students concurrently enrolled through a Teacher Cadet program at a participating Virginia high school. Designed to provide an introduction and foundation for the teaching profession, including awareness of personal attributes related to education, learning and cognitive styles, student growth and development, history and trends in public education, basic instructional approaches and the structure and governance of public education. The program includes an extended clinical component.

EDUS 200. Education in American Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An elective course for non-education majors, including those who may be exploring careers in education. An examination of the complex nature of our American educational system and various societal influences on that system. The course will include an exploration of some critical issues affecting the future of American education, on-site visits to educational institutions, and other field experiences in settings that will permit exploration of career options.

EDUS 202. Diversity, Democracy and Ethics. 4 Hours.

Semester course; 4 lecture hours. 4 credits. This course engages students in critical exploration of public education in the United States within sociocultural, historical and philosophical contexts. It examines the relationships between an increasingly diverse society and education in a democracy. Students will be taught the ethical obligations of educational professionals and how to become active agents for democratic, equity-oriented schools. In addition, the course will explore legal and policy aspects of education.

EDUS 203. Pop-cultural Foundations of Education: Film/TV, Music, Literature and Schooling in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will examine the relationship between education, schools and society as presented in film/TV, popular music and literature. Visual media and literature are valuable windows that can help us to see how a culture thinks about education and to consider the place of schools in contemporary society. Furthermore, popular culture images of teachers, teaching and schools are powerful influences on public educational debates, arguably even more powerful than educational research. As such, it is essential to think critically about these images, how they have evolved over time, the meanings they convey, and how they structure the ways we think about educational issues. Students will use visual media, music and literature to explore issues such as teaching, equality, educational aims and the relationship between schooling and social change.

EDUS 300. School and Society. 3 Hours.

Semester course; 3 lecture hours (delivered online, face-to-face or hybrid). 3 credits. The historical, sociological and philosophical backgrounds of educational theories and practices. The aim of the course is to help the student develop a basic understanding of education in the modern world.

EDUS 301. Human Development and Learning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of human development through the life span with special emphasis on child and adolescent psychology, the nature of learning, and basic concepts of learning theories.

EDUS 304. Educational Psychology for Teacher Preparation. 2 Hours.

Semester course; 2 lecture hours (delivered online, face-to-face or hybrid). 2 credits. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development. This course explores the application of psychological principles to the teaching-learning process, with special emphasis on learning and development. Intended specifically for pre- and in-service educators, the course will require students to apply theory and research in educational psychology to their prior, current and future teaching experiences.

EDUS 305. Educational Psychology. 3 Hours.

Semester course; 3 lecture hours (delivered online, face-to-face or hybrid). 3 credits. Prerequisite: PSYC 101. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development. Crosslisted as: PSYC 305.

EDUS 400. Independent Study. 1-6 Hours.

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

EDUS 401. Assessment in Diverse Settings. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: TEDU 413 or SEDP 378. Enrollment is restricted to students admitted to a B.S. in Education program. This course explores all aspects of assessment that a teacher encounters in preK-12 educational settings. The course will cover current assessment theories, approaches and instruments used to measure the performance of the children and students representing the diverse learners in today's classrooms – including students with and without disabilities, English language learners and students representing a range of cultural backgrounds. Assessments at all stages of instruction (before, during and after), including formal and informal assessments and their applications in an inclusive educational setting, will be addressed. Particular attention is paid to the ways in which teachers can gather and use assessments to make data-informed decisions for effective instruction and intervention leading to optimal child development and student achievement. Specifically, the course will explore the relationships among content standards, instruction and assessment as well as ways to use a variety of assessments to monitor student progress. The course emphasizes making valid inferences from assessments in a variety of formats; understanding the legal and policy context of assessment; and the implications for appropriate grading practices and decision-making. Course content and assignments will promote critical-thinking and problem-solving skills. Crosslisted as: SEDP 401.

EDUS 476. Methods for Residence Hall Assistants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: serve in VCU residence halls or permission of instructor. Course designed primarily to present resident assistants and others with student development concepts, peer assistance and helping skills, and group techniques. Residence halls will be used as primary learning laboratories.

EDUS 494. Topical Seminar in Education. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. A seminar intended for group study by personnel interested in examining topics, issues or problems related to the teaching, learning and development of students.

Reading and Study Skills (RDSS)**RDSS 100. Reading and College Study Skills. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of effective reading and study skills at the college-level. Emphasis is placed on vocabulary development as well as reading and study strategies.

RDSS 101. Advanced Reading, Study and Communication Skills. 3 Hours.

Semester course; 3 lecture and laboratory hours. 3 credits. Prerequisite: RDSS 100, adviser's recommendation, or instructor's permission. A study of advanced reading and study skills at the college-level. Students develop and apply critical reading-thinking skills, library research skills and advanced vocabulary.

Special Education and Disability Policy (SEDP)**SEDP 200. Characteristics of Individuals With Disabilities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course focuses on characteristics and identification of individuals with learning disabilities, emotional and behavioral disorders, intellectual disabilities, developmental delay, the less severe autism spectrum disorders, traumatic brain injury, deaf-blindness, visual impairment and other health impairments, and knowledge of characteristics throughout the lifespan, as well as providing information on effects of educational, psychosocial and behavioral interventions that serve as adaptations to the general curriculum. The possibilities of co-morbid or multiple conditions, coupled with cross-categorical instructional settings, warrant a class that examines all eligibility categories of students served under the special education, general curriculum.

SEDP 201. Teaching Individuals With Mild and Moderate Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an understanding and application of learning principles and methodologies for instructing, communicating and enhancing student learning that will reflect culturally responsive curriculum and pedagogy. An introduction to instructional strategies and organization of activities, including curriculum, media, materials and physical environment for children in grades K-12; studies of students with high-incidence disabilities in inclusive classroom environments are included. Candidates will develop skills to plan and deliver instruction in a variety of educational settings such as inclusive classrooms, resource rooms, self-contained classes and residential programs.

SEDP 202. Preparing Diverse Learners From Multicultural and Global Perspectives. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course is designed to enhance cultural competence of students through exploration of diversities from multicultural aspects and global perspectives. Students enrolled in the course will have multiple opportunities to increase their cultural awareness individually, reciprocally and socially. Throughout the course, students will explore diverse cultures and contexts within and outside of the U.S. Students will learn to view the relationship between the U.S. and the rest of the world as a dynamic and reciprocal interconnected unit instead of separate units. Topical areas centering on the main theme of multicultural and global perspectives include race, ethnicity, socioeconomic status, linguistic, gender, abilities, urban youth and sexual orientation differences. Key concepts include cultural beliefs, values, equity, diversity and inclusion. Personal and theoretical constructs of these key concepts are explored. Through lectures, readings, group projects, community activities, videos and class discussions, students will identify factors that have an impact on diverse learners and explore innovative approaches leading to the success of all learners.

SEDP 203. Special Education Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an overview of historical and current federal and state litigation and legislation, including those pertaining to special education and related services. Throughout this course, students will have various opportunities to learn federal and state statutes that address the educational rights of children/students with disabilities and their parents. Students will gain a deep understanding of the Individuals with Disabilities Education Improvement Act. Specifically, students will become familiar with federal statutes and regulations concerning assessment and evaluation procedures, due process and mediation, discipline, individualized education program, free appropriate public education, and least restrictive environment. Additional federal laws that are discussed include the Rehabilitation Act of 1973: Section 504 and the Americans with Disabilities Act. Students are also expected to read and discuss selected issues in Virginia special education law and selected passages from the state statutes and the relevant administrative and case laws.

SEDP 204. Trends in Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an understanding of the historical, philosophical and sociological foundations of public education in the United States, as well as standards for Virginia education and teaching professionals and ethical and accepted professional standards. The course will cover general knowledge of the foundations of educating students with disabilities, including a general overview of legislation and case law pertaining to special education; characteristics of individuals with and without exceptionalities, including growth and development from birth through adolescence; medical aspects of disabilities; family systems and culture; collaboration; integration/inclusion; transition; and classroom adaptations for educating students with disabilities in the least restrictive environments.

SEDP 216. Families and Professional Partnerships. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to increase the knowledge, skills and dispositions that are important for collaborating and communicating effectively with families of young children with special needs. This course will also emphasize understanding the role and responsibilities of community agencies and providers, and how understanding the role of members of the collaborative team can impact families in the education and transition of their children with disabilities to include education, training, employment, self-determination and other skills. During this course, students will explore the dimensions of family-centered services and person-centered planning, as well as the familial, ecological and cultural factors affecting young children with disabilities and their caregivers. Students will learn about theory, general principles and procedures for fostering collaborative partnerships among families, professionals and other stakeholders that lead to outcomes of individual and mutual empowerment.

SEDP 250. Special Education Elementary Supervision. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Enrollment is restricted to students with a minimum of 30 hours (sophomore, junior or senior standing). The purpose of this field experience is to provide teacher candidates with practical experiences within the classroom. The teacher candidate will be observed and evaluated based on demonstration of their knowledge and ability to meet performance standards measured by the Virginia Standards of Learning in any of the following areas: curriculum and instruction, assessment, classroom and behavior management, collaboration, professional and ethical behavior, characteristics, IEP development and implementation, instruction for reading, writing and mathematics, and transition.

SEDP 282. Multicultural Perspectives in Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to enhance cultural competence in diverse classrooms and schools. Major considerations include race, ethnicity, socio-economic status, linguistic abilities, and gender and sexual orientation differences. Key concepts include structural, curricular and instructional facets of working successfully in diverse educational settings. Personal and theoretical constructs of race, ethnicity, culture, disability and other related concepts are explored. Through lectures, readings, group projects, class activities, videos and class discussions students will explore the impact of institutional "isms" on both Anglo students and students from culturally and linguistically diverse backgrounds.

SEDP 311. Secondary Education and Transition Planning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course explores the literature, research, issues and trends that are relevant to children and youth with high-incidence disabilities (learning disabilities, emotional disabilities and/or mild intellectual disabilities) as they prepare for their transition to life after high school. Focus is on providing candidates with the ability to prepare their students and work with their families to promote successful transitions throughout the educational experience, including post-secondary training, employment and independent living, which address an understanding of long-term planning, transition assessments, career development, life skills, community experiences and resources, self-advocacy and self-determination, guardianship, and legal considerations. The full range of functioning is addressed in the areas of education, employment, social/emotional functioning and development, and personal and daily living issues. The overriding goal of this course is to provide candidates with the wherewithal for critical reflection in their professional practice to help individuals with disabilities develop, implement and achieve self-determined transition goals for their post-school years.

SEDP 315. Classroom Management and Behavior Support for Students With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will provide an in-depth analysis of theoretical models, research and strategies for supporting positive behavior of students with disabilities. Emphasis is on developing, implementing and evaluating behavior management programs in special education, including applied behavior analysis, functional assessment, positive behavioral supports and related classroom strategies. This course will help develop a candidate's ideas about examining the behaviors of students with special needs in school settings, including an understanding and application of school crisis management and safety plans, classroom and behavior management techniques, and individualized behavioral interventions. Techniques and approaches taught will promote skills that are consistent with norms, standards and rules of the educational environment and will be culturally diverse and responsive based upon developmental (e.g., students' ages and classroom management), cognitive, behavioral, social and ecological theory and practice. Students will learn to evaluate students' behavior and environments, as well as reflect on their own role in contributing to mitigating behavior problems. Candidates will also learn strategies to prevent and/or intervene in those factors to students' problematic behavior and facilitate their positive behavior.

SEDP 320. Development and Implementation of Positive Behavior Support Plans. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide pre-service teachers with the opportunity to acquire advanced skills for effective planning, implementing and evaluating behavior strategies and supports. It will also present strategies available for management, communication and discipline at the introductory level. Students will examine a cross section of theories, models and legal and ethical variables relevant to orchestrating learning across school settings where individuals with disabilities are receiving instructional, social, behavioral and transition life-skill services. The use of positive behavioral interventions and functional behavior analysis will be discussed and students will demonstrate appropriate skills using these strategies. Students will also learn the process used to develop and monitor behavior support plans.

SEDP 330. Survey of Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Presents an overview of the historical basis and regulatory requirements related to special education, including the individual education program as a legal document and the rights and responsibilities of parents, teachers and schools. The characteristics of learners with disabilities and their educational and medical implications are also examined, as well as the cultural, familial and ethical issues involved.

SEDP 350. Special Education Middle School Supervision. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Prerequisite: SEDP 250. Enrollment is restricted to students with a minimum of 60 hours (junior or senior standing). The purpose of this field experience is to provide teacher candidates with practical experiences within the classroom. The teacher candidate will be observed and evaluated based on demonstration of their knowledge and ability to meet performance standards measured by the Virginia Standards of Learning in any of the following areas: curriculum and instruction, assessment, classroom and behavior management, collaboration, professional and ethical behavior, characteristics, IEP development and implementation, instruction for reading, writing and mathematics, and transition.

SEDP 378. Teaching Math to Students With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed for prospective teachers in the special education program and addresses mathematics pedagogy for students with disabilities. The course will focus on selecting appropriate mathematics curricula and instructional methodologies; learning how to assess students and develop appropriate goals, including Virginia Standards of Learning across grades K-12; understanding of application of mathematics service delivery, curriculum and instruction of students with disabilities, including alternate ways to teach and adapt math content to students accessing the general curriculum across K-12 environments; and planning and integrating appropriate and evidence-based math strategies into students' programming based on assessment data.

SEDP 379. Assessment Practices in Autism and Developmental Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course creates a structure for understanding and designing effective social interactions and communication strategies, social-emotional development, and behavior interventions for children with autism spectrum disorder and other developmental disabilities. The course focuses on the application of empirically validated social interaction/communication and behavioral interventions that are consistent with principles of ABA in designing the interventions.

SEDP 380. Teaching Reading to Students With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides empirically validated instructional procedures to address reading for students with disabilities. The focus will be on understanding state and national reading curriculum, pedagogy and assessments of students' reading skills; planning and implementing appropriate instructional procedures; and monitoring students' progress. Development of age-appropriate language acquisition, reading and writing is included. Curriculum development that includes scope and sequence, lesson plans, instructional methods based on access to the general curriculum and Virginia standards, including alternate ways to teach reading and writing content, is applied.

SEDP 389. IEP and Due Process in Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide educational personnel with knowledge of the eligibility process and legal regulatory requirements for IEP development. Participants will apply knowledge of content standards, assessment and evaluations throughout the K-12 grades to construct IEPs; make decisions about student progress, instruction, program, accommodations, placement, teaching methods and transition; and complete hands-on IEP writing experiences that will address academic and functional needs of students with disabilities. Participants will engage in debate regarding due process and other regulatory requirements and measures, including the least restrictive setting for students with special needs, timelines and team member responsibilities.

SEDP 401. Assessment in Diverse Settings. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: TEDU 413 or SEDP 378. Enrollment is restricted to students admitted to a B.S. in Education program. This course explores all aspects of assessment that a teacher encounters in preK-12 educational settings. The course will cover current assessment theories, approaches and instruments used to measure the performance of the children and students representing the diverse learners in today's classrooms – including students with and without disabilities, English language learners and students representing a range of cultural backgrounds. Assessments at all stages of instruction (before, during and after), including formal and informal assessments and their applications in an inclusive educational setting, will be addressed. Particular attention is paid to the ways in which teachers can gather and use assessments to make data-informed decisions for effective instruction and intervention leading to optimal child development and student achievement. Specifically, the course will explore the relationships among content standards, instruction and assessment as well as ways to use a variety of assessments to monitor student progress. The course emphasizes making valid inferences from assessments in a variety of formats; understanding the legal and policy context of assessment; and the implications for appropriate grading practices and decision-making. Course content and assignments will promote critical-thinking and problem-solving skills. Crosslisted as: EDUS 401.

SEDP 402. Exceptionality and Technology: Augmentative and Alternative Communication and Assistive Technology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will provide students with foundational ideas and concepts regarding the selection and use of assistive technology and augmentative and alternative communication for students with disabilities. Students will recognize and plan for the uses of technology that will aid the student in their education, work and independent living. This course emphasizes the selection and use of AT and AAC in general and special education settings (K-12) for students across the continuum of disability.

SEDP 404. Methods in Teaching Science and Social Studies for Students With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to juniors or seniors with a minimum of 60 credits. This course combines a process approach of science programs drawn from biological, earth and physical sciences with the study of social studies curriculum, materials and selected instructional strategies for teaching students with disabilities. An understanding of vocabulary development and comprehension skills in science and history will cultivate strategies for students to ask effective questions, summarize and retell both verbally and in writing strategies to impart an understanding of science and history standards of learning. The first half of this course will be dedicated to encouraging effective science instruction for diverse students, with the second half dedicated to encouraging effective social studies/science instruction.

SEDP 405. Collaborative Practices and Co-teaching in Inclusive Schools. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to juniors or seniors with a minimum of 60 credits. This course is designed to help prospective general and special educators develop an understanding of collaborative and communication strategies, models and techniques to meet the educational needs of children with disabilities. Skills in consultation, case management and collaboration, including coordination of service delivery with related services providers, general educators, administrators, parents, students and other professions (e.g., paraprofessionals, community agencies) in collaborative work environments will be understood. Class activities, discussions and projects will concentrate on appropriately meeting the needs of children with disabilities within the context of the general education setting. Students will also study and practice a variety of instructional and organizational techniques for adapting the general classroom environments in order to address the needs of children with disabilities in the general education classroom.

SEDP 410. Building a Community of Learners: Classroom Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EDUS 301, PSYC 301 or PSYC 304 with a minimum grade of C. The course is designed to encompass pre-K through grade 12 classroom management theory and application, motivation theory and application, diversity, socio-emotional development, trauma-informed care, and restorative justice for regular education and special education students. Crosslisted as: TEDU 410.

SEDP 415. Action Research in Education and Special Education: Capstone Project. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to seniors with a minimum of 90 credits. This course will prepare students to be reflective practitioners by connecting theory, research and practice through the exploration of action research. The course will consist of three components that promote students' capacity for putting research into action related to their direct work with children and youth with disabilities and their families. Students will first be guided to investigate a research-based instruction/intervention strategy or approach to teaching children and youth with disabilities or developmental delays through a structured literature review. Students will then develop a research plan to be implemented during one of their externships based on the results of the literature review. Finally, students will present their literature review summary and research plan via an online and/or face-to-face poster presentation format. Ongoing, interactive reflections from students are essential components throughout the course.

SEDP 420. Special Education Leadership for Inclusive Schools. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students with a minimum of 90 credits (senior standing). This course will introduce participants to issues involved in leadership for creating inclusive environments in schools. These systems are aimed to fully include students with disabilities and ensure positive outcomes for students both academically and in functional skills needed for participation in the education environment, community, employment and for post-secondary success. Students will be challenged with assessing their own leadership styles, professional and ethical standards, personal integrity, and how beliefs and values shape actions. Students will also explore strategies to promote the importance of inclusive education as well examine Virginia standards and CEC standards for inclusive schools. Students will have a chance to see the impact of teacher leadership on special education and understand how to promote self-advocacy in students.

SEDP 450. Special Education High School Supervision. 2 Hours.

Semester course; 1.5 lecture and .5 field experience hours. 2 credits. Prerequisite: SEDP 350. Enrollment is restricted to students with a minimum of 60 hours (junior or senior standing). The purpose of this field experience is to provide teacher candidates with practical experiences within the classroom. The teacher candidate will be observed and evaluated based on demonstration of their knowledge and ability to meet performance standards measured by the Virginia Standards of Learning in any of the following areas: curriculum and instruction, assessment, classroom and behavior management, collaboration, professional and ethical behavior, characteristics, IEP development and implementation, instruction for reading, writing and mathematics, and transition.

SEDP 460. Specialized Reading and Writing Interventions for Students With Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SEDP 380. This course will cover the complex nature of language and literacy to include assessment strategies and instructional procedures, curriculum and instruction alternatives, and program planning for the literacy development of students with reading and/or writing disabilities. Skills in the area of phonemic awareness, sound and symbol relationships, explicit phonics instruction, syllables, phonemes, morphemes, decoding skills, word attack skills, syntax and semantics will be developed. Students will learn teaching skills, remediating deficits, utilizing research/evidence-based interventions, providing explicit reading and writing instruction, implementing and evaluating individual and group management techniques and individual interventions that teach and maintain emotional, behavioral and social skills across ages and developmental levels. The course will focus on how, as a teacher, one participates in tiered support systems and facilitates/provides appropriately focused and intensive literacy instruction.

SEDP 461. Specialized Math Interventions for Students With High Incidence Disabilities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SEDP 378. This course focuses on interventions for students with high incidence disabilities who may need additional instruction beyond their core mathematics class. The course is designed to increase student understanding and achievement by increasing time and intensity on grade-level standards. Strategies used in the intervention course should be different than strategies used in the core math course and are inclusive of all student populations, including general education, special education or English language learners. When done appropriately, this course will both build student confidence and reduce the likelihood of them repeating their core mathematics course. In addition, students will explore research and evidence-based interventions. The class will be designed around the seven principles of effective intervention for students with mathematics disabilities.

SEDP 492. Independent Study. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Opportunities are provided for supervised independent study in selected areas. All work offered on an individual basis with the approval of instructor and department chair.

SEDP 495. Universal Design for Learning and Transition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The purpose of this course is to provide students with evidence of each of the components of universal design for learning within access to the general academic curriculum – multiple means of representation, expression and engagement. Students will engage in an understanding of theories of learning and development, including cognitive and learning processes, social-emotional development, practices for culturally and linguistically diverse learners, such as English learners, gifted and talented students and students with disabilities, in individual and universal contexts. Additional focus is placed on UDL components linked to effective transition planning embedded within academic instruction targeting successful transitions to postsecondary educational settings. Emphasis is placed on beginning research on the use of this approach and its promising practice for addressing academic and transition goals as well as increasing student motivation and self-determination.

SEDP 499. Student Teaching. 6 Hours.

Semester course; 6 field experience hours. 6 credits. The major goal of this course is to provide student teachers a challenging, relevant and rewarding experience, which will allow them to acquire professional competence. Student teachers will learn to respect and work effectively with students of varying backgrounds and disabilities; assume the various responsibilities of the classroom teacher; plan instruction and learning experiences that recognize the individual needs and differences of students; organize and manage the classroom environment to maximize learning; and practice being a reflective teacher.

Teacher Education (TEDU)**TEDU 101. Introduction to Teaching. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides undergraduate students with an introduction to teaching and learning in elementary settings. Students will explore current educational reforms and their influences on elementary schools and students. Service-learning activities will enable students to gain firsthand experiences in urban elementary classrooms.

TEDU 102. Health Education as a Discipline. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide students with a basic understanding of health behavior theories, valid sources of information and tools for assessing school health needs. Community health issues and health advocacy are also examined.

TEDU 103. Lifetime Fitness, Wellness and Nutrition for the Health and Physical Educator. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide health and physical educators the foundational knowledge specific to concepts related to the health- and skills-related components of fitness, functional fitness, energy balance and overall well-being. The course will provide an overview of the necessary skills needed to develop smart goals for personal fitness, nutrition and wellness.

TEDU 200. Motor Learning and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will be introduced to the major concepts of motor control and motor learning and influencing conditions. The course will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

TEDU 201. Assessment and Technology in Health and Physical Education. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course provides students with the theoretical foundation for assessment in health and physical education. Students will utilize multiple data sources, develop rubrics and analyze available technologies for assessment within each of the domains of K-12 health and physical education. Students will design lessons utilizing technology with the purpose of enhancing the curriculum.

TEDU 202. Health Education Content. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course focuses on health promotion and the prevention of injury and disease. Students will also examine healthy relationships as well as mental and emotional health.

TEDU 203. Focus on Choice. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 3 credits. A career planning experience for adults focusing on discontinuity in life patterns and a review of current educational and occupational opportunities. Consideration of the world of work, fields of education and volunteer service, and the development of one's own potential will be featured.

TEDU 204. Outdoor Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to examine the principal philosophical foundations of adventure theory and outdoor educational leadership. Concepts of judgment, decision-making, leadership and environmentally correct practices are introduced. Cooperative and team-building practices will be emphasized as a way to promote increased collaboration, communication, critical-thinking and creativity while in the health and physical education environment. Students will learn pedagogical skills needed to teach a number of outdoor education activities, including a variety of teaching styles, the development of lesson plans, assessment in the four domains of physical education and the use of basic class management skills.

TEDU 205. History and Philosophy of Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course has been designed to provide an overview of the professional aspects of health and physical education. Specifically, the course provides students with knowledge of the historical role of health and physical education; acquaints them with the different domains that fit under the “physical education” umbrella and within the health professions; informs them of opportunities present at VCU and in the greater community in the health and physical education fields; and provides information about the full spectrum of career choices in physical education and health. Students will also spend one hour a week in a public school setting.

TEDU 207. Urban Awareness and Urban Education. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. This course is designed to enhance students’ knowledge of urban schools through the examination of historical, economic, political and socio-cultural frameworks that explore how issues of race, class, gender and immigration status have affected the distribution of equal educational opportunities in urban schools in the United States. Diversity in human experiences will be examined within urban cultures and educational settings. Students will engage with research and various literature about inequities in urban schools but also investigate the complexity and challenges of providing excellent education in urban school contexts. The research projects and class book discussions will provide an understanding of communities, their resources, demographics and economy in urban settings that affect education in various ways.

TEDU 210. Debunking Classroom Myths: How and Why Do We Learn Ideas Incorrectly?. 3 Hours.

Semester course; 3 lecture hours (delivered in hybrid format). 3 credits. Ever wonder why concepts are taught over and over and are still difficult to explain? This course explores misconceptions commonly learned in K-12 math, science, humanities and social sciences. Students will investigate these ideas through the lens of their own experiences and what is known about how people learn. This course builds understanding of best practices in learning through reading, discussion, reflection and presentation.

TEDU 300. Adapted Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to prepare future teachers and professionals to meet the needs of persons with disabilities in organized health, physical education and activity programs in the school and/or recreational and sport setting. It provides an overview of those disabilities found most frequently in public schools. The course will also help students become critically reflective learners.

TEDU 301. Biomechanics of Teaching Movement Skills. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will participate in learning experiences that will lead to the development of fundamental movement skills, i.e., manipulative, locomotor and nonlocomotor. Utilization of basic biomechanical principles will be infused in all topics.

TEDU 302. Elementary Methods of Physical Education. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course is designed to enhance student knowledge of and preparation for the teaching of elementary physical education through lecture, practical experience, small-group work and projects. Students will learn how to plan and conduct an elementary program, control the learning environment, effectively discipline children and analyze children’s behavior. Students will also learn the characteristics of a good teacher as well as methods to change personal teaching behaviors to increase classroom effectiveness. Students will design and conduct activities which integrate literacy with physical education. To become a more reflective teacher, students will write self-evaluations throughout the semester.

TEDU 303. Teaching Team and Individual Sports for Lifetime Fitness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will develop educational skills and methodology for instruction of team and individual lifetime sports and activities in the gymnasium and outdoor settings. They will learn the pedagogical skills needed to teach these activities, including the use of a variety of teaching styles, the development of lesson plans, the assessment of student knowledge and skill acquisition, and the use of basic class management skills. These pedagogical skills will be applied within the realm of specific sports such as flag football, soccer, tchoukball, team handball, badminton, pickleball and golf.

TEDU 304. Secondary Methods of Physical Education. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course is designed to prepare students for student teaching. Students will learn pedagogical skills including the use of a variety of teaching styles, the development of lesson plans and unit plans, the assessment of student knowledge and skill acquisition, and the use of classroom management skills. In addition, students will gain insight into the development of a physical education curriculum as influenced by philosophies, models, issues and trends. Elementary, middle and high school levels are included in discussions. Students will also learn how to integrate literacy into the physical education curriculum. A major emphasis will be to prepare students as critical reflective practitioners by learning how to evaluate the teaching/learning situation and make appropriate changes. In that regard, students will learn how to design and analyze instruments that help them in this evaluation.

TEDU 310. Elementary School Practicum A. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Corequisites: TEDU 410, TEDU 414 and TEDU 426. Restricted to students admitted to the Extended Teacher Preparation Program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded pass/fail.

TEDU 311. Middle School Practicum. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Corequisite: TEDU 537. Restricted to students admitted to the Extended Teacher Preparation Program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded pass/fail.

TEDU 312. High School Practicum. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Pre- or corequisite: TEDU 311; corequisite: TEDU 540, 545, 547 or 548. Restricted to students admitted to the M.T. program with concentrations in secondary education. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Course graded as pass/fail.

TEDU 313. Elementary School Practicum B. 2 Hours.

Semester course; 2 practicum hours. 2 credits. Prerequisite: TEDU 310. Corequisites: TEDU 517, TEDU 522 and TEDU 591. Enrollment is restricted to students admitted to the M.T. program with a concentration in early and elementary education. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group and whole class involvement. Graded as pass/fail.

TEDU 314. Practicum for Health and Physical Education. 2 Hours.

Semester course; 2 practicum hours. 2 credits. Prerequisite: TEDU 302. Corequisites: TEDU 304 and TEDU 403. Enrollment is restricted to students admitted to teacher preparation in the B.S.Ed. in Health and Physical Education program. A field placement in health and physical education that precedes student teaching/internship. This field placement includes planned observations, tutorials and small-group and whole class involvement. Graded as pass/fail.

TEDU 381. Middle School Practicum for Engineering Education. 2 Hours.

Semester course; 2 practicum hours. 2 credits. Corequisites: TEDU 382, TEDU 413 and TEDU 420. Enrollment is restricted to students in the B.S.Ed. in Secondary Education and Teaching with a concentration in engineering education program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded as pass/fail.

TEDU 382. High School Practicum for Engineering Education. 1 Hour.

Semester course; 1 practicum hour. 1 credit. Corequisites: TEDU 381, TEDU 413 and TEDU 420. Enrollment is restricted to students in the B.S.Ed. in Secondary Education and Teaching with a concentration in engineering education program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded as pass/fail.

TEDU 385. Teaching Writing Through Children's Literature. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will focus on the art of teaching writing through the use of quality children's literature. The course is designed to give students an appreciation of the value of children's literature, examine current trends and explore the use of literature across the genres as tools for developing readers and writers. In addition, students will learn to construct a successful community of writers in PK and elementary classrooms. Students will critically examine theory, techniques and strategies in the context of how children learn to think and write. A focus on pedagogical and rhetorical theory will include an examination of personal writing processes.

TEDU 386. Children's Literature I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales and poetry, as well as a survey of the history of children's literature. Crosslisted as: ENGL 386.

TEDU 387. Literature for Adolescents. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Designed to acquaint the prospective middle and secondary school English teacher with the nature, scope and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents.

TEDU 389. The Teaching of Writing Skills. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation and topic construction. Includes extensive journal and essay writing. Crosslisted as: ENGL 389.

TEDU 390. Movement Education. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: TEDU 101. This service-learning course will examine the physiological changes that occur in the brain as a result of moderate physical activity and the relationship to increased cognition. Students will also examine how to develop movement-based lessons to complement existing curricula across all content areas. Students enrolled in this course will receive a movement education certification upon completion of the course requirements.

TEDU 400. Independent Study. 1-6 Hours.

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

TEDU 402. Becoming a Health and Physical Education Professional. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course is designed to prepare the teacher candidate to bridge from student to student teacher. Activities focus on professional experiences and behaviors.

TEDU 403. Teaching Health Education. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course has been designed to prepare students to think critically and become independent problem-solvers and decision-makers by applying previously acquired professional knowledge to curriculum design and instruction in multiple settings. Students will learn pedagogical skills including the use of a variety of teaching styles, the development of lesson plans and unit plans, the assessment of student knowledge and skill acquisition, and the use of classroom management skills. Students will also gain insight into the development of a health education curriculum as influenced by philosophies, models, issues and trends. Elementary, middle and high school levels are included in discussion.

TEDU 405. Seminar for Student Teaching. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Corequisites: TEDU 493 and TEDU 495. This seminar is "attached" to the student teaching internship in the schools and is intended as a companion piece to that semester experience. Issues, including those which have been identified by members of the seminar, as well as issues that arise in the classroom and those that are of perennial concern to teachers of health and physical education are the basis for this class. The teacher as the critically reflective educator is the focus of this seminar: what choices the teacher has in the classroom and what effect those choices have upon student learning.

TEDU 410. Building a Community of Learners: Classroom Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EDUS 301, PSYC 301 or PSYC 304 with a minimum grade of C. The course is designed to encompass pre-K through grade 12 classroom management theory and application, motivation theory and application, diversity, socio-emotional development, trauma-informed care, and restorative justice for regular education and special education students. Crosslisted as: SEDP 410.

TEDU 411. Integrating the Arts in Curriculum for Young Children. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides pre-service teachers with an understanding of how experiences in visual art, music, drama and movement can be used to support the growth and development of children ages 3 to 8. Students will learn of the importance of all of the arts for children's cognitive, socio-emotional and psychomotor development. Emphasis will be given to integrating developmentally appropriate experiences in the arts into early childhood curriculum.

TEDU 413. Curriculum Methods and Instructional Models. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EDUS 202; and EDUS 301, PSYC 301 or PSYC 304, both with a minimum grade of C. A study of developmentally appropriate curriculum and instructional models for PK-12 children. The course includes the study of curriculum, a variety of instructional models, Virginia Standards of Learning, Virginia's Foundation Blocks for Early Learning, diversity, assessment, planning and creating positive learning environments.

TEDU 414. Curriculum and Methods for Early/Elementary Children. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: admission to teacher preparation program. Corequisites: TEDU 310 (Practicum A) and 426. A study of developmentally appropriate curriculum and methods for early/elementary children, including diversity, assessment, behavior guidance and management, planning instruction and creating positive learning environments. Includes an overview of the history of early/elementary education and issues currently facing the profession.

TEDU 416. Math/Science Methods for Early Childhood Education. 4 Hours.

Semester course; 3.5 hour lecture and .5 hours field experience hours. 4 credits. A combined math and science early and elementary methods course that focuses on the teaching of mathematics and science in a PK through 3rd grade class. The course is a lecture/ hands-on course connected with a practicum experience in a local PK-3rd grade classroom. This course is designed to teach pre-service teachers how to plan, implement and assess strong student-centered mathematics and science lessons in today's diverse classrooms. Activities and assignments will focus on research-based practices, effectively using a variety of instructional strategies and hands-on experiences to help students develop their understanding of abstract math and science concepts. The class will help to position the pre-service teacher as a reflective decision-maker.

TEDU 417. Early/Elementary Science Methods. 3 Hours.

Semester course; 2.5 lecture and .5 field experience hours. 3 credits. Prerequisite: TEDU 413. Corequisites: TEDU 422 and TEDU 496. An undergraduate course designed to renew and/or expand teachers' knowledge and skills in the teaching of science in the elementary classroom and the community. New materials will be examined in the light of current trends, research findings and professional recommendations.

TEDU 420. Teaching Middle and High School Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: EDUS 301. Enrollment is restricted to students admitted to teacher preparation or by permission of instructor. Examines the teaching strategies, materials and objectives of engineering education in middle and high schools. Emphasizes the engineering processes, engineering design cycle, integration of science and mathematics into engineering and use of design challenges to engage students in real-world applications of engineering.

TEDU 422. Early/Elementary Math Methods. 3 Hours.

Semester course; 2.5 lecture and .5 field experience hours. 3 credits. Prerequisites: MATH 303, MATH 361 and MATH 362; and STAT 206, STAT 208 or STAT 210. Corequisites: TEDU 417 and TEDU 496. An early and elementary mathematics methods course that focuses on the teaching of mathematics in the PK through 6th grade classroom. The course is a lecture/ hands on course with 40 hours of in class contact time and a 20 contact hour practicum experience in a local K-5 classroom. This course is designed to teach preservice teachers how to plan, implement and assess strong student-based mathematics lessons in today's diverse classrooms. Activities and assignments will focus on research-based practices, effectively using a variety of instructional strategies and using math manipulatives to help students discuss their thinking. The class will help to position the preservice teacher as a reflective decision-maker.

TEDU 425. Emergent and Early Literacy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an introduction to the theories, concepts, pedagogical approaches, methods and materials used to promote early literacy acquisition and development. Within the framework of the stages of literacy development, students will develop competency in the components of emergent literacy, including language development, phonological and phonemic awareness, phonics, fluency, comprehension, vocabulary and writing. Application of course content in preschool and early elementary classrooms will encourage critical reflection on pedagogical approaches as students meet the diverse language and learning needs of young children ages birth to 8.

TEDU 426. Teaching Reading and Other Language Arts. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Presents teaching strategies and materials in reading and the other language arts based on current theory and research. Emphasizes the interrelatedness of listening, speaking, reading and writing and the importance of naturalistic language experiences.

TEDU 452. Teaching English Language Learners. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: TEDU 413. This course is designed to help teachers who plan to teach English and other content areas to PK-12 students who are speakers of other languages. The course includes attention to social and cultural contexts, the diversity of emergent bilingual students in the United States, legal and policy contexts, models of ESL programs and advocacy for students. Students will also develop skills in lesson preparation and delivery for emergent bilingual students within ESL classrooms as well as in other content area classrooms.

TEDU 462. Internship I. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisites: TEDU 312, TEDU 410, TEDU 414 and TEDU 420. Corequisites: TEDU 464 and TEDU 481. This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in a secondary classroom.

TEDU 464. Internship II. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisites: TEDU 312, TEDU 410, TEDU 413 and TEDU 420. Corequisites: TEDU 462 and TEDU 480. Enrollment is restricted to students who have received passing scores on VCLA and Praxis II. This internship serves as the teacher candidate's culminating clinical experience. Teacher candidates complete a full-time placement that provides them with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in a secondary classroom.

TEDU 466. Literacy Assessment and Intervention in the Early/Elementary Classroom. 4 Hours.

Semester course; 3.5 lecture and .5 field experience hours. 4 credits. Prerequisites: TEDU 425 or TEDU 426. Students will examine reading problems by focusing on reading diagnosis and intervention related to classroom settings. This course involves evaluating and tutoring individual students with reading difficulties. Emphasis is placed on making decisions based upon students' individual needs and critical reflection to improve instruction. Throughout the semester, students will develop skills as an educator who is a critically reflective practitioner using the VCU School of Education conceptual framework as a guide. Completion of a supervised practicum is a requirement of the course.

TEDU 471. Internship I (PK-K). 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 416, TEDU 466 and TEDU 490. Corequisites: TEDU 475 and TEDU 481. Enrollment is restricted to students who have completed the student teaching approval process (including passing scores on VCLA and Praxis II). This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in an early childhood classroom setting. Teacher candidates complete a full-time seven-to-eight-week placement in a PK/K classroom and assume full responsibility for planning and implementing instruction under the tutelage of a cooperating teacher for a minimum of two weeks.

TEDU 472. Elementary Internship I (PK-2). 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 417, TEDU 422, TEDU 466 and TEDU 496. Corequisites: TEDU 474 and TEDU 481. Enrollment is restricted to students with passing scores on VCLA and Praxis II. This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in an elementary classroom. Teacher candidates complete a full-time seven-to-eight-week placement in a pre-K/Kindergarten to 2nd grade classroom.

TEDU 474. Elementary Internship II (Grades 3-5). 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 417, TEDU 422, TEDU 466 and TEDU 496. Corequisites: TEDU 472 and TEDU 481. This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. In addition it serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in an elementary classroom. Teacher candidates complete a full-time seven-to-eight-week placement in a 3rd through 5th grade classroom. For this internship there is sometimes an option to be placed in a sixth grade classroom as well.

TEDU 475. Internship II (Grades 1-3). 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 416, TEDU 466 and TEDU 490. Corequisites: TEDU 471 and TEDU 481. Enrollment is restricted to students who have completed the student teaching approval process (including passing scores on VCLA and Praxis II). This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in an early childhood classroom setting. Teacher candidates complete a full-time seven-to-eight-week placement in a grade 1-3 classroom and assume full responsibility for planning and implementing instruction under the tutelage of a cooperating teacher for a minimum of two weeks.

TEDU 478. Internship I for Engineering Education. 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 382, TEDU 410, TEDU 413 and TEDU 420. Corequisites: TEDU 479 and TEDU 480. Enrollment is restricted to students who have received passing scores on the VCLA and Praxis II. This internship serves as the teacher candidate's culminating clinical experience. It provides students with an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in a secondary classroom.

TEDU 479. Internship II for Engineering Education. 4 Hours.

Semester course; 4 field experience hours. 4 credits. Prerequisites: TEDU 382, TEDU 410, TEDU 413 and TEDU 420. Corequisites: TEDU 478 and TEDU 480. Enrollment is restricted to students who have received passing scores on the VCLA and Praxis II. This internship serves as the teacher candidate's culminating clinical experience. Teacher candidates complete a full-time placement that provides an opportunity to demonstrate what they have learned during their professional academic preparation. It also serves as an opportunity for public school and VCU personnel to evaluate and strengthen teacher candidates' application of theory to practice in a secondary classroom.

TEDU 480. Investigations and Trends in Teaching: Engineering. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Corequisites: TEDU 462 and TEDU 464. This course is a companion to the student internship in secondary education. Its major purposes are to cultivate the knowledge, dispositions and skills of a critically reflective practitioner into actual teaching practice. To do so, this class provides opportunities for interns to describe, analyze and evaluate the curricular, instructional and management decisions they make during their internship. The course also focuses on professionalism and ethical standards, as well as personal integrity in the teaching profession.

TEDU 481. Teaching as a Profession. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Corequisites: TEDU 472 and TEDU 474; or TEDU 471 and TEDU 475. This course is a companion piece to the student internship in elementary education. Its major purposes are to cultivate the knowledge, dispositions and skills of a critically reflective practitioner into actual teaching practice. To do so, this class provides opportunities for interns to describe, analyze and evaluate the curricular, instructional and management decisions they make during their internship. The course also focuses on professionalism and ethical standards, as well as personal integrity in the teaching profession.

TEDU 485. Directed Student Teaching I. 6 Hours.

6 credits. Prerequisites: admission to TEDU 310 or equivalent with a minimum grade of C, recommendation of practicum supervisor and passing score on the VCLA test. A classroom teaching experience in a public school or other approved setting, which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing and evaluating classroom activities.

TEDU 486. Directed Student Teaching II. 6 Hours.

6 credits. Prerequisites: admission to TEDU 310 or equivalent with a grade of C or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting, which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing and evaluating classroom activities.

TEDU 490. Social Studies Methods for Early Learners. 2 Hours.

Semester course; 1.75 lecture and .25 field experience hours. 2 credits. This course's design is centered on helping the pre-service PK-3 early childhood/elementary teacher examine the purpose of social studies education, the connections between social studies and other curricular areas, and the persisting issues in social studies education, and to do it in an equitable way for all learners. The course will introduce students to an integrative reflective planning process and a variety of instructional strategies and materials. Its ultimate goal is to prepare students to understand the role of the teacher as a reflective decision-maker.

TEDU 493. Field Experience I. 4 Hours.

Semester course; 4 field experience hours. 4 credits. Enrollment is restricted to students who have been admitted to teacher education and have passing scores on VCLA, Praxis I and Praxis II. An in-depth field experience in a public school, health education/health promotion agency or other approved setting. Students will complete a full-time seven-to-eight-week placement teaching in the PK-5 health and physical education setting. This practical experience will lead to greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom. Consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements. Fulfills capstone requirement.

TEDU 494. Topical Seminar in Education. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. A seminar intended for group study by personnel interested in examining topics, issues or problems related to the teaching, learning and development of students.

TEDU 495. Field Experience II. 4 Hours.

Semester course; 4 field experience hours. 4 credits. Enrollment is restricted to students who have been admitted to teacher education and have passing scores on VCLA, Praxis I and Praxis II. Addresses competencies in health and physical education. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students will gain practical experience by completing a full-time seven-to-eight-week placement teaching in grades 6-12 in a health and physical education setting.

TEDU 496. Early/Elementary Social Studies Methods. 3 Hours.

Semester course; 2.5 lecture and .5 field experience hours. 3 credits. Prerequisite: TEDU 413. Corequisites: TEDU 417 and TEDU 422. This course's design is centered on helping the PK-6 teacher examine the purpose of social studies education, the connections between the discipline of social studies and other curricular areas, and the persisting issues in social studies education in an equitable way for all learners. The course will introduce students to an integrative reflective planning process and a variety of instructional strategies and materials. Its ultimate goal is to prepare students to understand the role of the teacher as a reflective decision-maker.

L. Douglas Wilder School of Government and Public Affairs

Criminal Justice (CRJS)

CRJS 181. Introduction to Criminal Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Comprehensive overview of criminal justice; assesses the extent of crime; reviews law enforcement, judicial and correctional processes at all levels of government; discusses history and philosophy of public safety; evaluates career opportunities.

CRJS 253. Introduction to Corrections. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A survey of societal responses to the offender; traces the evolution of practices based on philosophies of retribution, punishment and rehabilitation; reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system; introduces the emerging area of correctional programming within the community.

CRJS 254. Introduction to Policing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A survey of different facets of law enforcement including the activities of public police agencies and private security organizations. Assesses changes in law enforcement philosophy and practices, police relationships with the public and the political arena and anticipated future trends in policing.

CRJS 300. Forensic Criminology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. The intersection of law, predictions of dangerousness, mental disorder and crime. Behavioral prediction, classification and the development of typologies of offenses and offending will be considered. Issues in the use of clinical and statistical prediction methods in criminal justice will be presented.

CRJS 302. Legal Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 302.

CRJS 305. Policing Theories and Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 254. An overview of the nature and application of law enforcement theory. Examines the theoretical underpinnings of a variety of law enforcement practices, with emphasis on evolving trends.

CRJS 316. Victimology and Victimization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Enrollment is restricted to criminal justice majors and minors. Introduces the concepts of victimology and various forms of criminal victimization. Evaluates historical and contemporary policy responses to addressing victimization in the United States. Particular attention is given to measuring the nature and extent of victimization, victims' roles in the criminal justice system, the impact of victimization on individuals, and laws and policies designed to prevent victimization.

CRJS 320. Principles of Criminal Investigation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene management, searching, collecting, handling and preserving of evidence as applied to forensic crime scene investigation.

CRJS 324. Courts and the Judicial Process. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Examines the systems that adjudicate criminal and civil law; includes constitutional authority, jurisdictions and trial processes, with particular emphasis on reform in court administration, disposition without trial and sentencing.

CRJS 335. Ethics and Decision-making in Criminal Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Enrollment is restricted to criminal justice majors and minors. Understanding the ethical basis for decision-making in criminal justice, which involves the liberty interests of others. Important decision points are examined to apply ethical perspectives to decisions for criminalizing behaviors, methods of enforcing the law, charging suspects, convicting and sentencing offenders. These decisions include those made by citizens, legislators, police, prosecutors, defense counsel, judges and corrections officials.

CRJS 350. Evaluation and Treatment of the Offender. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 253. An analysis of the issues and procedures involved in evaluating individual differences in offenders and among classes of offenders; current diagnostic and treatment methods are discussed; introduces the student to case analysis and correctional counseling techniques. Includes analysis of evaluation and treatment resources external to corrections.

CRJS 351. Community Corrections. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 253. A comprehensive review of various community-based rehabilitation and treatment efforts; includes analysis of probation, parole, work release, halfway houses and other methods of re-integrating the offender into society.

CRJS 352. Crime and Delinquency Prevention. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Review and analysis of the problems associated with prevention of crime and delinquency, viewed in a total systems context. Programs and activities involving citizen, community and agency interrelationships will be developed and examined. Students are responsible for preparing and evaluating projects with crime preventive goals.

CRJS 355. Criminological Theory. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the intellectual underpinnings of the criminal justice system. Includes analysis of evolving values and ideas regarding social control, individual and collective responsibilities and rights, the role of punishment, politics and the law, practitioners as public servants, and criminological and other foundations of the criminal justice system.

CRJS 358. Lawyer's Role in the Justice System. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Examines the multiple responsibilities of lawyers from an historical and contemporary perspective. The basic techniques of the lawyer's craft will be studied with emphasis placed on case advocacy, negotiation skills and legal reasoning, and problem-solving.

CRJS 360. Foundations of Criminal Law. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Clarifies both the content and role of criminal law within criminal justice and its administration in America. Explores the moral, theoretical and historical foundations of American criminal law and jurisprudence; elements and classification of criminal conduct; burdens of proof; defenses to criminal culpability; and a variety of crime types focusing in particular on crimes against person and property.

CRJS 370. Criminalistics and Crime Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A comprehensive evaluation of current developments in research, instrumentation and laboratory technology utilized to detect, identify, analyze and compare evidence.

CRJS 373. Crime Scene Evidence: Law and Trial Procedure. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Provides a fundamental understanding of evidence law. Examines the nature and admissibility of various forms of evidence. Provides an understanding of the investigator's role in the judicial process including the presentation of testimony and adversarial proceedings.

CRJS 380. Research Methods in Criminal Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181; and STAT 208 or STAT 210. Designed to familiarize the student with current and applied research methods in criminal justice, including the application of data and information processing techniques and procedures; analyzes research in criminal justice journals and government reports; and enhances the capability to evaluate contemporary research.

CRJS 382. Gender, Crime and Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the role of gender as it relates to crime and justice. Special attention will focus on the gendered experiences of practitioners, offenders and victims within the criminal justice system in terms of processing, adjudication and institutional responses. Crosslisted as: GSWS 382.

CRJS 400. Current Issues in Juvenile Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Restricted to criminal justice majors. Examines key issues facing the modern American juvenile justice system. Integrates social science research, juvenile justice policy and legal scholarship pertaining to current law and policy controversies in juvenile justice.

CRJS 401. Sex Crime and Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Restricted to criminal justice majors. Examines the nature and extent of sex offending, societal responses to sex crime, and the laws and policies enacted to reduce sexual offending. Explores the etiology of sex offending as well as methods to evaluate the efficacy of sex crime laws.

CRJS 407. Urban Jails. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and CRJS 253. Restricted to criminal justice majors. Examines issues encountered by corrections officers who work in urban short-term detention facilities. Explores the complexities of jails in urban settings as well as the diverse and dynamic offender population in urban jails.

CRJS 417. Drug Use, Drug Policy and Criminal Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Enrollment is restricted to criminal justice majors and minors. A course designed to examine drug use and its important consequences for individuals, health and communities. Traditional criminal justice prohibition-based policies, such as the "war on drugs," are examined and compared and contrasted with the principles of harm reduction. A review of harm-reduction partnerships with law enforcement, courts and correctional agencies will be discussed.

CRJS 421. Race, Crime and Criminal Justice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. This course is an examination of race in the context of the criminal justice system. Emphasis on the various observations of racial minorities as victims and offenders by law enforcement, courts and corrections. In addition, the course will explore the theoretical approaches on how race and ethnicity are connected to the criminal justice system and its myriad processes. In addressing these connections, emphasis is placed on social forces and other related factors as applicable to the criminal justice system.

CRJS 425. Violent Crime Scene Investigation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Introduces students to specialized tools and scientific aids used in the criminal investigation of homicide and rape cases. Applies investigative techniques and preparation of trial evidence used in homicides and rape cases.

CRJS 432. Criminal Justice: Organizations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Considers the behavioral dimensions of administrations in criminal justice and public safety agencies. Examines the concepts of leadership and decision-making and the effect of environmental dynamics in the management of the criminal justice system.

CRJS 434. Police Administration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 254. Examines major management concepts and principles with special emphasis on consideration of law enforcement. Policies and procedures formulated and followed by managers in law enforcement settings will be evaluated from a structural as well as a functional perspective. Contemporary and anticipated future problems, challenges and trends facing police managers will be addressed.

CRJS 450. Cyber Crime and Computer Forensics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Study of computer-related crime and related laws and policies. Focus on the investigation and processes of securing evidence for computer-related crimes.

CRJS 463. Crime and Justice in Global Perspective. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. This course is designed to move students beyond an "American-centric" view of criminal justice in an introduction to crime, law, criminal justice systems and crime control in cross-national perspective. Crime is a global problem that has been part of the human experience through both time and space; as such we will discuss crime trends around the world, the statistics that tell us what we think we know about crime around the world, and the different systems of law, policing, courts and corrections around the world in place to combat it. Problems of cultural relativity, international crime, transnational organized crime and policy transfer will also be discussed.

CRJS 468. Organized Crime. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. The nature and extent of organized crime will be examined. The distinctions from street crimes will be reviewed, as will an assessment of organized crime history, causation, investigation tools, prosecution, defense and sentencing alternatives. The changing nature of organized crime, its transnational manifestations and the outlook for its future will be explored.

CRJS 475. Criminal Procedure. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and UNIV 200, or permission of instructor. Analyzes criminal procedure regarding the courts and their supervisory role over prosecutions and the use of testimonial and non-testimonial evidence. Examines the judicial interpretive processes by which the public safety is balanced with individual rights.

CRJS 480. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 355 and 380. Restricted to seniors in criminal justice with at least 85 credit hours taken toward the degree. A capstone course designed to assist students to apply and to think critically about current knowledge regarding crime, crime trends, law, law enforcement, the adjudication process, corrections and crime prevention. Scenarios, research, projections and evaluation of different viewpoints will be employed to develop the student's ability to assess methods of argumentation, use information and apply existing knowledge to new fact situations.

CRJS 491. Topics in Criminal Justice. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: CRJS 181. In-depth examination of selected administration of justice topics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

CRJS 492. Directed Individual Study. 1-3 Hours.

Semester course; variable hours. 1, 2 or 3 credits. Maximum total of 6 credits. Prerequisite: CRJS 181. Available to all other criminal justice students who are seniors and have a minimum GPA of 3.0 (with permission of department chair) as a substitute for a major elective course. Provides an independent study opportunity for the adult student who is (or was) employed in a criminal justice, safety or risk administration position and who does not require internship or volunteer experience.

Government and Public Affairs (GVPA)

GVPA 100. Making Policy Real: Social Problems and Policy Solutions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce students to public affairs, expose them to the intersections among Wilder School disciplines through current issues and provide them with placement and career opportunities available through the school. The course explores current social problems, crises, challenges and policy solutions and will expand the students' knowledge and scope of the process and impact of public decision-making. The course will use social problems as a key framework to discuss public policy, civic engagement, policy analysis and the influence of politics and the media on public affairs.

GVPA 391. Special Topics in Government and Public Affairs. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. A maximum 6 credits in all special topics courses offered in the Wilder School may be applied to any of the school's majors. Intended for sophomores and juniors. An intensive focus on a selected field of interest relevant to all majors in the school. See the Schedule of Classes for specific topics to be offered each semester.

GVPA 399. Introduction to Science and Technology Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: HIST 399/SCTS 300.

GVPA 423. Virginia Capital Semester Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to students in the Virginia Capital Semester program. Designed as an integral part of the program, this course provides an examination of state policy issues and state legislative processes using the current Virginia General Assembly session as illustration.

GVPA 491. Advanced Special Topics in Government and Public Affairs. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. A maximum 6 credits in all special topics courses offered in the Wilder School may be applied to any of the school's majors. Intended for advanced students and seniors. An intensive focus on a selected field of interest relevant to all majors in the school. See the Schedule of Classes for specific topics to be offered each semester.

GVPA 493. Government and Public Affairs Internship. 1-6 Hours.

Semester course; variable hours. 1-6 credits. (50 hours per credit.) May be repeated for a maximum of 6 credits. Permission of internship coordinator required. Designed to provide the student with an opportunity to relate theory to practice through observation and actual experience within the field of government and public affairs.

GVPA 494. Virginia Capital Semester Internship. 3 Hours.

Semester course; 3 internship hours. 3 credits. Corequisite: GVPA 423. Enrollment restricted to students in the Virginia Capital Semester program. Designed to provide students with an opportunity to relate theory to practice through participation in activities related to the annual session of the Virginia General Assembly. Graded as Pass/Fail.

GVPA 495. UROP Directed Study. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students enrolling in this course must meet the eligibility requirements of the Undergraduate Research Opportunity Program. Designed to provide advanced research opportunities to undergraduate students. Topics chosen in consultation with the UROP coordinator. Students may take a total of six GVPA 495 credits; only three of those credits may be applied to the major.

GVPA 499. Wilder School Scholars Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Capstone seminar course focusing on a broad topic in one of several disciplines of interest to Wilder School Scholars. Topics, structure and content determined each semester.

Homeland Security and Emergency Preparedness (HSEP)

HSEP 101. Homeland Security and Emergency Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the public- and private-sector dimensions of the broad range of theoretical and practical aspects of homeland security and emergency preparedness, including: origins of natural and terrorist-caused disasters; local, state and federal emergency management planning and operations; health infrastructure capabilities; public communication strategies; business community concerns; ethical, legal and constitutional questions; as well as the social and psychological dimensions of disasters.

HSEP 301. Terrorism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the modern problem of terrorism with an emphasis on the political nature of terrorist acts. Examines the history of terrorism, domestically within the U.S. and internationally, the role of religion, the structures and operations of terrorist organizations, as well as counterterrorism policies and policy-making. Crosslisted as: POLI 367.

HSEP 302. Emergency Planning and Incident Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the basic tasks of emergency preparedness and disaster mitigation, including planning, response and recovery. Special emphasis will be placed on command arrangements, coordination and budgetary issues among emergency responders (law enforcement, firefighters and health care system officials), and within and between federal, state and local governments.

HSEP 310. Risk and Vulnerability Assessment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to analytical techniques and methodologies for threat and vulnerability assessment of various types of public and private infrastructure. An all-hazard approach is employed, considering natural disaster, system failure and terrorist attack (conventional or weapons of mass destruction). Special attention will be focused on critical infrastructure protection as well as cyberterrorism.

HSEP 311. Strategic Planning for Homeland Security and Emergency Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the strategic planning for emergency preparedness, operations and recovery for all hazards, as well as terrorist-prevention security measures. The course will focus on public goods/free rider issues, setting organizational priorities, governmental budgeting choices, legal aspects of government regulation of infrastructure and business community security concerns.

HSEP 314. Cybersecurity Policy. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course addresses emerging strategic, legal and policy issues associated with computer attack, exploitation, detection and defense. Students will be introduced to research and developments across a range of issues and will engage with topics related to national security, homeland security and economic policy, and local governance.

HSEP 320. The Intelligence Community and the Intelligence Process. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the concepts of and challenges for state, local and federal policy making and organization for homeland security and emergency preparedness. The intelligence process – the collection, analysis, sharing and dissemination of information within and between local, state and federal governmental agencies – is a special focus.

HSEP 330. Legal and Constitutional Issues in Homeland Security and Emergency Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the legal and civil liberties changes and challenges brought on by terrorist attacks. Topics addressed may include surveillance issues, federal legislation passed in the aftermath of the terrorist attacks, the rights of foreign nationals, the rights of U.S. citizens, the governmental infrastructure for decisions concerning legal rights and the difficulties of prosecuting terrorist suspects, such as jurisdictional issues, rules of evidence and prosecution strategies.

HSEP 335. International Terrorism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 301/POLI 367. This course covers conceptual and measurement issues associated with the study of cross-national international terrorism, which focuses on examining and explaining country-level terrorism patterns within and between countries. Students will examine global terrorism by focusing on the patterns and correlates of country-level terrorism. Using a multidisciplinary approach that draws academic insights from political science, sociology, economics and criminology, this course exposes students to three related areas of international terrorism.

HSEP 347. Intelligence Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 320. The course provides an overview of the intelligence analysis process and explores a variety of structured analytic intelligence techniques that have been used successfully. This course was designed to contribute to the development of intelligence analysts who can think critically and will contribute to strong analytical tradecraft.

HSEP 350. Emergency Public Health Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 101. This course provides an introduction and understanding of the policy, strategy and practical application of emergency public health preparedness, response and mitigation from an all-hazards perspective. Through a public health perspective for communities and nations that are at risk for large-scale emergencies, it describes the strategic context presented by the 21st-century risk environment, and explores the interactions, contributions and roles of multiple sectors such as the government, non-governmental organizations, private enterprises and individuals before, during and after a public health emergency.

HSEP 356. Making a Terrorist. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 301. This course examines the radicalization and deradicalization processes of violent extremists, with specific emphasis on terrorists. Students will learn about the processes and factors that lead individuals to engage in violence, as well as how these processes can be co-opted to draw individuals away from extremist organizations and ideologies.

HSEP 360. Critical Infrastructure Protection and Resiliency. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 310. An advanced study of homeland security critical infrastructure protection and resiliency from an all-hazards perspective. Develops an understanding of the policy, strategy and practical application of critical infrastructure protection and resiliency issues. Special emphasis on understanding the strategic context presented by the 21st-century risk environment, DHS critical infrastructure sectors, and the challenges and opportunities.

HSEP 365. WMD Materials and Tactics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides a qualitative and minimally technical introduction to weapons of mass destruction materials that might be expected in a terrorist incident and the tactics that may be employed in their use. Students will gain an understanding of the characteristics of these materials, how they might be employed tactically, how it is possible to respond to WMD incidents in a safe and effective manner and WMD countermeasures. The course will also dispel several "mythical and magical" beliefs about WMD materials.

HSEP 370. Disaster Response and Recovery. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 302. This course surveys the research and practice of disaster response and recovery. Students will learn about disaster recovery theory and practice, recovery planning, debris management, donations, volunteer organizations, environmental recovery, sustainable recovery, post-disaster housing recovery, and disaster impacts on vulnerable populations. The course covers all relevant actors during and after disasters, including community members, government agencies, elected officials, media, nonprofit organizations and the business sector.

HSEP 375. Human Trafficking. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will receive an overview of contemporary human trafficking and modern-day slavery. The course provides an understanding of the scope of the human trafficking problem, both domestically and globally, and covers the different types of human trafficking that exist, including sex, labor, organ, body and baby trafficking, as well as the exploitation of child soldiers.

HSEP 391. Topics in Homeland Security and Emergency Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Maximum total of six credits in all departmental topics courses may be applied to the major. Prerequisites: CRJS 367/HSEP 301/POLI 367 and CRJS 368/HSEP 302. An intensive focus on a specialized field of interest to the study of homeland security and emergency preparedness. See the Schedule of Classes for specific topics to be offered each semester.

HSEP 418. Counterterrorism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 301/POLI 367. This course examines the extent to which terrorism is a threat to U.S. national interests and security by analyzing terrorist organizations' strategies, tactics and methods of operation. It also evaluates the pros and cons of a variety of potential government (foreign and domestic) responses to terrorism, such as diplomacy, sanctions, covert action and military operations in both a historic and contemporary context.

HSEP 490. Senior Seminar. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 310, HSEP 320/CRJS 375 and HSEP 330/CRJS 330. A capstone course examining the major issues related to homeland security and emergency preparedness. Students will be required to produce a research project related to a role-playing in-class simulation of an emergency situation that will include exercises in red-teaming.

HSEP 491. Advanced Topics in Homeland Security and Emergency Preparedness. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 367/ HSEP 301/POLI 367 and CRJS 368/HSEP 302. An intensive focus on a specialized field of interest to the study of homeland security and emergency preparedness within a seminar setting. See the Schedule of Classes for specific topics to be offered each semester. Maximum total of six credits in all departmental topics courses may be applied to the major.

HSEP 492. Independent Study. 1-4 Hours.

Semester course; 1-4 credits. Maximum total of six credits in all independent study courses may be applied to the major. Prerequisites: junior or senior standing with 12 credits in HSEP courses. Permission of instructor or program director required, with determination of course credit value prior to registration. An independent study that allows students to perform research under the direction of qualified instructor in a subject or field of major interest.

Urban Studies and Planning (URSP)**URSP 102. Introduction to Human Geography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to human geography from a global perspective, emphasizing settlement patterns, human-environment interactions, cultural variations, political transitions and population change in the global economy.

URSP 108. Uncovering Richmond. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the dramatic changes Richmond has undergone in recent decades and how those changes mirror trends in cities across the country. The student will discover the role of politics, public safety, education and other important issues in the development of the city through course lectures, readings, discussion and presentations by guest speakers.

URSP 116. Introduction to the City. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the various theories of urbanism and attempt to offer solutions to the problems of urban life in modern civilization. The course will survey the major works of those who have studied cities or offered solutions and alternatives to existing urban structures. The works of noted social reformers, political analysts, economists, and architects as well as urban planners will be examined through lectures, readings, films, slides, discussions and field trips (when feasible).

URSP 120. Urban Issues in Film. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to a variety of themes in urban studies through the medium of film. Focusing on a selection of films and related readings, the course exposes students to critiques of the socioeconomic, historical, political and structural aspects of cities and regions.

URSP 204. Physical Geography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the interrelated systems of the earth and the physical processes that create regional differences in climate and physiography. Provides a solid foundation for better understanding human-environment interactions, such as those related to climate change, by exploring topics such as earth-sun relationships, air temperature, atmospheric pressure and precipitation, winds and global circulation, plate tectonics, tectonic and volcanic landforms, weathering, and the impacts of running water, waves, wind and glaciers in shaping the landscape.

URSP 245. Housing and Community Revitalization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The purpose of this course is to examine housing issues as a major determinant of the make-up and the quality of community life in modern American society. Attention is given to the public and private forces that influence various components of the housing issue, such as: demand for housing; housing availability to various economic and social groups; housing design and quality (including new construction, rehabilitation, historic preservation, and adaptive re-use), housing finance and the relationship of housing to planning in metropolitan areas.

URSP 261. Design of the City. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Architecture, space and activities play a special role in the overall design of the city. These elements are analyzed to understand their interrelationships and importance to a city's visual character. Architectural styles, civic art, effects of space on the individual and methods for designing cities will be discussed. The class is for those who want to understand urban design elements and for those who will be involved in city design.

URSP 303. World Regions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture and urban conditions. Regions to be selected each semester from Anglo-America, Latin America, western Europe, Eastern Europe, the former USSR, Middle East and North Africa, Africa (south of the Sahara), Indian subcontinent, China, Japan, Southeast Asia, and Oceania. May be taken only once for credit. Crosslisted as: INTL 303.

URSP 304. Urban Social Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course aims to familiarize undergraduate students with health as a concern in urban studies, and facilitate essential skills in reflexive thinking about the topic. Drawing together foundational readings in public and community health, health service delivery and urban health, this course examines canonical concepts such as social determinants of health, health care financing and community health needs assessments. Broadly, the course is broken up into three distinct parts. The first part introduces students to foundational concepts in public and community health, including the social-ecological model, vulnerable populations, community engagement and health policy. The second part introduces students to key aspects of health care service delivery, such as the types and distribution of health care institutions including the health care safety net. The final part invites students to apply acquired learning to case studies in urban health and to translate their knowledge into a forward-looking view as we enter the next era of urban health.

URSP 306. Economic Geography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the workings of regional economies through analysis of industries and occupations. Studies the reasons for variation in regional economic characteristics and examines policies and strategies for enhancing regional economic conditions. Course relies heavily on the use of Microsoft Excel; proficiency with using this program is required.

URSP 310. Introduction to Urban and Regional Planning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 116 or permission of instructor. Introduction to the theory and practice of governmental planning in the U.S. with emphasis on urban and regional planning. Surveys the history of planning, current planning practice and the ethical responsibilities of planners.

URSP 312. History of Human Settlement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A cultural and historical geography of human migration and settlement over the earth. Topics may include agricultural and urban systems, exploration, colonization and imperialism, and changing relationships with the environment, during and since the Middle Ages. Crosslisted as: ANTH 312.

URSP 313. Research and Field Methods in Urban and Regional Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 208 or STAT 210. Introduces students to a variety of field and research techniques used to gather and analyze information to study urban and regional issues. Key topics include designing a research project, developing and implementing surveys, conducting focus groups and observation, analyzing data statistically, interpreting and reporting results, and utilizing secondary information.

URSP 315. The Evolution of American Cities. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of how cities developed in the United States and the factors that contributed to the process of urbanization. Emphasis is placed on the public attitudes and values that have dominated particular periods of history and how these values affected the efforts to urbanize. The American city is examined as a vital force in the economic, social and political development of modern America, as the major location for conflict between people of all persuasions, and as the home of much of what is meant by American "civilization".

URSP 316. Urban Life in Modern America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Restricted to nonmajors. Examines how a modern city functions, the public services rendered within the city and the impact of public policy on the city. The city is treated as a system consisting of economic, social and political activities that influence and are influenced by the physical/demographic environment. Each activity is studied separately with the cause-effect relationships among the activities highlighted by an analysis of public service delivery and, more generally, urban public policy.

URSP 321. Urban Economics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B, ECON 205 with a minimum grade of B or ECON 210. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas. Crosslisted as: ECON 321.

URSP 322. Urban Finance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG/URSP 306. Treats the local government from a practical management perspective as an organization in a political-economic environment. The nature of city expenditures and sources of revenues are explored. Budgeting and taxing decision-making processes are explored in depth. Economic impacts of these decisions on citizens are analyzed and implications for practice drawn.

URSP 331. Geography of Latin America and the Caribbean. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the physical and human geography of Latin America and the Caribbean from an interdisciplinary perspective. A systems approach is used to concentrate on particular topics, themes and patterns that have broader relevance to the overall region or subregions (e.g. Central America, the Lesser Antilles, the Andes, Amazonia) rather than on the details of each country. However, in relation to some topics, case studies are used that may focus on a particular country.

URSP 332. Environmental Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 204. An interdisciplinary review of domestic and international environmental problems and their underlying causes, current management frameworks, alternative management approaches and strategies, and barriers to their implementation. Other topics include: environmental history and economics, population growth, natural resources use, biodiversity, pollution. Crosslisted as: ENVS 332.

URSP 333. Geography of Africa. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: AFAM 333/INTL 333.

URSP 334. Regional Geography of _____. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as North America, Europe, Latin America, the Middle East and India, the USSR and Eastern Europe. See the Schedule of Classes for specific region to be studied each semester. Crosslisted as: INTL 334.

URSP 340. World Cities Outside of North America. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to the theories and ideas of urbanism through writings and cases of major global cities outside of the United States. Crosslisted as: INTL 340.

URSP 350. Great Cities of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: FRLG 345/INTL 345.

URSP 360. Community and Regional Analysis and GIS. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the core functions and applications of geographic information systems. Trains students in the management, modeling, analysis and visualization of urban and regional georeferenced data. The GIS techniques covered include the classification and symbolization of geographic features, data querying, table and spatial joining, spatial selection, projections, creation and editing of spatial features, geocoding, spatial analysis, and mapping.

URSP 361. Introduction to Urban Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The objectives of the course are to understand the principles of urban design and the means for their implementation within the context of the planning process. The course is organized around three primary topics: human interaction with the spatial environment, implementation of urban design proposals and application of the subject matter of the course through a number of field experiences and projects.

URSP 391. Special Topics in Urban Studies. 1-3 Hours.

Semester course; 1, 2 or 3 credits. Prerequisite: because of the changing subject matter to be treated in this course, permission of the instructor is required. Students will have an opportunity to examine in detail some questions of significance. See the Schedule of Classes for the specific topic to be offered each semester.

URSP 392. Independent Study. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: junior or senior standing is required. Under supervision of a faculty adviser, who must approve the student taking the course, a student studies a topic of interest.

URSP 413. Policy Implementation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An examination of the administrative setting of government and its policy impacts on public programs, policy design and redesign, and evaluation and monitoring.

URSP 425. Labor, Employment and Regional Development. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the role of employment and the workforce in regional development from social, economic and geographic perspectives. Explores the factors impacting U.S. employment patterns, such as the green economy, immigration and technological change, and their implications for workers and regional economies. Also examines policy approaches to address labor and workforce issues with special consideration of disadvantaged groups and communities.

URSP 428. Land Use and Infrastructure Planning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 310. Explores how the integration of land use, transportation and other infrastructures (e.g., water supply, waste water and storm water) in urban and regional planning can improve development patterns to ensure sustainability and livability. Examines specific professional planning techniques such as site plan review, subdivision permitting and capital improvements planning.

URSP 435. Diversity, Equity and Inclusion in the City. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will be divided into two units. Unit One – “Foundations” will provide a foundation to the course through the introduction of key concepts related to diversity, equity and inclusion and a brief overview or relevant planning history and practice. Additionally, several frameworks will be explored as a lens to discuss the interactions between demographic identity and urban environments. In Unit Two – “Applications”, students will explore through articles, readings and speakers, present-day urban planning practices that address the needs and empower various identity groups in Richmond and in other cities in the U.S.

URSP 440. Senior Capstone Seminar in Urban and Regional Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: URSP 310 and URSP 313. Enrollment also restricted to students with senior standing. Requires students to synthesize knowledge gained in previous major courses and apply it through one or more field-based exercises. Also explores issues related to career planning.

URSP 461. Applied Planning Studio. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: all core courses in the urban and regional studies program. Applying the principles and theories of urban studies, students work as a group in the preparation of a plan to address a real community problem.

Urban Studies and Planning Lab (URSΖ)**URSΖ 204. Physical Geography Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or co-requisite: URSP 204. Problem-solving and map-reading exercises related to topics covered in URSP 204, such as earth-sun relationships, air temperature, atmospheric pressure and precipitation, winds and global circulation, plate tectonics, tectonic and volcanic landforms, weathering, and the impacts of running water, waves, wind and glaciers in shaping the landscape. Provides essential analytical skills aimed at a better understanding of human-environment interactions, such as those related to climate change.

School of Medicine**Anatomy and Neurobiology (ANAT)****ANAT 301. Head and Neck Anatomy for Dental Hygienists. 3 Hours.**

2 lecture and 1 seminar hours. 3 credits. An overview of head and neck anatomy that examines the major osteological, neural, muscular, vascular and visceral features. Lectures will be supplemented by textbook, self-study packages and by brief laboratory exercises that provide hands-on exposure to these major anatomical features.

ANAT 302. Microscopic Anatomy (Dental Hygiene). 2 Hours.

8-week course; 3 lecture and 1 laboratory hours. 2 credits. A lecture course in the microscopic anatomy of the cells and tissues relevant to the oral cavity.

Emergency Medical Sciences and Administration (EMSA)**EMSA 200. Introduction to EMS Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Emergency Medical Services systems in the U.S. Examines the 14 attributes of an EMS system to include the history of EMS, public and private organizations, delivery models, personnel, training and integration in the overall health care system.

EMSA 201. Emergency Medical Technician. 3 Hours.

Continuous courses; 4 lecture and 4 laboratory hours. 6-6 credits. Prerequisites: current CPR certification at the Health Care Provider level and permission of instructor; completion of EMSA 201 to enroll in EMSA 202. Students will learn to recognize the nature and seriousness of a patient's condition or extent of injuries, to assess requirements for emergency medical care, and to administer appropriate emergency medical care based on assessment findings of the patient's condition. Includes the lecture and laboratory elements needed to be eligible for certification as a Virginia and/or National Registry EMT-B as defined by the commonwealth of Virginia and the U.S. Department of Transportation's National Curriculum for EMTB.

EMSA 202. Emergency Medical Technician. 3 Hours.

Continuous courses; 4 lecture and 4 laboratory hours. 6-6 credits. Prerequisites: current CPR certification at the Health Care Provider level and permission of instructor; completion of EMSA 201 to enroll in EMSA 202. Students will learn to recognize the nature and seriousness of a patient's condition or extent of injuries, to assess requirements for emergency medical care, and to administer appropriate emergency medical care based on assessment findings of the patient's condition. Includes the lecture and laboratory elements needed to be eligible for certification as a Virginia and/or National Registry EMT-B as defined by the commonwealth of Virginia and the U.S. Department of Transportation's National Curriculum for EMTB.

EMSA 300. Foundations of Paramedic Practice. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open only to EMSA majors. Prerequisites: EMSA 200, 201-202. Foundation course covering medical ethics, medical legal issues, wellness and injury prevention, life span development, and communication with patients. Also reviews the anatomy and physiology of the airway and respiratory system, the assessment and establishment of airway including basic and advanced airway management.

EMSA 310. Clinical Practicum I. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 310, 320, 400 and 405. First in a series of three application courses. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's airway.

EMSA 320. Field Practicum I. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 310, 320, 400 and 405. First in a series of three application courses. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in a mobile intensive care unit. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's airway. Develops the ability to team lead and manage a basic incident.

EMSA 340. Fundamentals of Pathophysiology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open to EMSA majors only. Foundation course for subsequent courses on specific disease processes. Covers cellular metabolism, disease processes, shock, Multi Organ Dysfunction Syndrome (MODS), the immune system and inflammatory response.

EMSA 360. Field Operations and Safety. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. The student will learn how to manage an incident and implement patient care in the pre-hospital environment. Students will integrate the principals of general incident management, management of mass casualty incidents and the safe rescue of patients from water, below grade, highway and hazardous situations.

EMSA 400. Pincipals of Pharmacology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open to EMSA majors only. Presents the classification of pharmaceuticals, pharmacokinetics and pharmacodynamics of medications. Integrated discussion of agents used for the peripheral and central nervous systems, and respiratory, cardiovascular, gastrointestinal and endocrine systems are addressed. Integrates these agents with the pathophysiology of each body system to form a plan for management and administration. The application of drug dosage calculations, medication preparation, sterile technique and standard precautions for the preparation and administration of medications.

EMSA 401. Pediatric Advanced Life Support (PALS). 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: certification/licensure as a paramedic, R.N., M.D., D.O., dentist, physician's assistant, or enrolled as a paramedic, medical or nursing student. A comprehensive course that emphasizes early recognition of pre-arrest states and the prevention of cardiopulmonary arrest according to American Heart Association guidelines. Covers relevant priorities and techniques that enable effective intervention in pediatric resuscitation by physicians, nurses, paramedics and other health care workers who are licensed to do advanced practice intervention, including airway management, vascular access and intravenous fluid and medication administration.

EMSA 402. Advanced Cardiac Life Support (ACLS). 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: certification/licensure as a paramedic, R.N., M.D., D.O., dentist, physician's assistant, or enrolled as a paramedic, medical or nursing student. A comprehensive course that emphasizes early recognition of pre-arrest states and the prevention of cardiopulmonary arrest according to American Heart Association guidelines. Covers relevant priorities and techniques that enable effective intervention in adult cardiac resuscitation by physicians, nurses, paramedics and other health care workers who are licensed to do advanced practice intervention, including airway management, vascular access and intravenous fluid and medication administration.

EMSA 405. Advanced Patient Assessment. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. Covers the acquisition and analysis of patients' histories and advanced physical assessments. Encompasses normal and abnormal variations of different developmental and ethnic groups to perform a comprehensive history and physical to form a clinical diagnosis. Incorporates appropriate documentation and communication through written, verbal and direct patient contact.

EMSA 411. Clinical Practicum II. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 340, 360, 441 and 443. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's condition.

EMSA 412. Clinical Practicum III. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 430, 440, 442 and 450. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's condition.

EMSA 421. Field Practicum II. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 340, 360, 441 and 443. Focuses on the patient presenting with cardiopulmonary, obstetrical and gynecological pathologies, and pediatric patients, under the supervision of a preceptor in a mobile intensive care unit. Requires the synthesis of the assessment of the pathology to form a clinical diagnosis and treatment plan for each patient. Demonstrates the ability to assess, perform and coordinate advanced patient care under supervision.

EMSA 422. Field Practicum III. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 430, 440, 442 and 450. Focuses on the patient presenting with medical complaints or traumatic injury patients under the supervision of a preceptor in a mobile intensive care unit. Requires the synthesis of the assessment of the pathology to form a clinical diagnosis and treatment for each patient. Demonstrates the ability to assess, perform and coordinate advanced patient care under supervision.

EMSA 430. Trauma. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of trauma. Covers the structure of trauma care systems, kinematics and epidemiology of trauma. Integrates the assessment, clinical diagnosis, development and application of a management plan for patients with hemorrhage, shock, burns, head, thoracic, abdominal, musculoskeletal and spinal injuries.

EMSA 440. Medical Emergencies. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Open to EMSA majors only. Integrates the assessment, clinical diagnosis, development and application of a management plan for patients with needs in the following systems: endocrine, gastrointestinal, urological, neurological and hematological. Will also encompass patients presenting with toxicological, environmental and behavioral/psychiatric emergencies.

EMSA 441. Basic Electrocardiography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Permission of instructor required. Reviews the relevant anatomy, physiology and electrophysiology of the cardiac system. The acquisition, interpretation and diagnosis of cardiac dysrhythmias using three-lead electrocardiograms will be covered.

EMSA 442. Advanced Electrocardiography. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: EMSA 441 or equivalent and permission of instructor. Reviews the relevant anatomy, physiology and electrophysiology of the cardiac system. The acquisition, interpretation and diagnosis of cardiac dysrhythmias using 12-lead electrocardiograms will be covered.

EMSA 443. Cardiopulmonary Medicine. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of cardiopulmonary pathologies into the assessment, clinical diagnosis, development and application of a management plan.

EMSA 445. Assessment-based Management. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Open to EMSA majors only. Students will synthesize and integrate the pathophysiological principles with assessment results to formulate a clinical impression, then develop and implement an appropriate treatment plan on a programmed patient or manikin. Patient complaints will be inclusive of the materials presented in previous courses for pediatric, adult and geriatric patient populations.

EMSA 450. Obstetrics, Gynecology and Pediatrics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of women and children into the assessment, clinical diagnosis, development and application of a management plan for women with gynecological emergencies, normal pregnancies and deliveries, and abnormal pregnancies and deliveries. Will also integrate the assessment, diagnosis and management of the neonatal and pediatric patient for medical and traumatic injuries and illness.

EMSA 460. EMS Operations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Topics presented include medical incident command, national incident management systems, post-9/11 issues and needs, interoperation with other agencies, interoperability of communications between agencies, deployment methods, OSHA regulations at incident scenes and field supervision.

EMSA 461. EMS Supervision and Human Resources. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The principles of personnel management and processes for effective EMS organizations are explored. Employment regulations, job analysis, performance assessment, recruitment and retention, training and development, employee and labor relations. Also presented are the factors and processes relating to paid and volunteer personnel, medical directors, shift schedules and general personnel issues.

EMSA 462. Management of EMS Organizations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines theory, processes and techniques needed to manage the EMS agency. Will address regulatory, management, finance, reimbursement, legislation, regulation and other contemporary issues affecting EMS organizations.

EMSA 463. Legal Issues in Health Care. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines basic principles and practices of law affecting EMS operations of ground and air transport systems. Topics will include the legal aspects of patient care and treatment, medical services, and hospital-patient related functions and health care and public safety employment law.

EMSA 464. Research and Quality Improvement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A review of published research in EMS. Selected studies will be reviewed with respect to their methodology, statistics, measurement and design. Basic research principles, scientific theory and the ability to critically interpret peer-reviewed literature will be emphasized.

EMSA 465. EMS Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The principles of adult education and training will be presented. Topics will include domains of learning, principles of adult learning, construction of lesson plans and use of current technology for presentation of content. Dealing with barriers to effective education and special considerations for non-traditional teaching and learning settings will be presented. Students will prepare and function as assistant instructors in other EMS education programs.

EMSA 466. Injury Prevention and Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to public health principles and an overview of injury prevention principles for EMS personnel and the community. Review of epidemiological principles and patterns of injuries related to occupation, transportation, interpersonal violence and related incidents. Emphasis will be placed on prevention of injuries. The success of fire prevention will be explored as an example. The role of public health and EMS in the post-9/11 world will be examined.

EMSA 470. Summative Field Internship. 1 Hour.

Semester course; 1 laboratory hour. 1 credit. (45-hour minimum.) May be repeated. Open to EMSA majors only. This is an evaluation of the student's ability to assess, perform and coordinate advanced patient care without the assistance of the preceptor.

EMSA 471. Summative Senior Seminar. 3 Hours.

Semester course; 3 credits. Open to EMSA majors only. The synthesis, integration and evaluation of the student's entire paramedic curriculum experience. Provides students with the opportunity to review and present their ability to assess, perform and coordinate advanced patient care. Prepares the student for transition into the profession.

EMSA 472. Professional Issues in EMS. 3 Hours.

Semester course; 3 credits. Open to EMSA majors only. Provides an overview of the current and potential issues facing EMS. Discussions and assignments are designed to enable the student to investigate and report on issues affecting delivery of health care, patient and provider safety, cost of care, research, legislation and issues affecting staffing and personnel.

EMSA 474. Critical Care Transportation Provider I. 3 Hours.

Semester course; 3 credits. Designed for the experienced paramedic or registered nurse. Objective is to offer formal training in the concepts and essential skills required for the treatment of critical care patients by ground or aeromedical mode. Topics covered include: flight physiology, aeromedical considerations, medical legal aspects, X-ray interpretation, lab data interpretation, hemodynamic monitoring, advanced airway management and mechanical ventilation, and a review of pathologies, assessment and management of medial and traumatically injured patients. Students must be paramedics, R.N.s or advanced providers and should have ALS certification for more than two years with current certification in ACLS, trauma life support, PALS and BLS health care provider.

EMSA 475. Critical Care Transportation Provider II. 3 Hours.

Semester course; 3 credits. A continuation of the concepts and ideas covered in EMSA 474.

EMSA 476. Critical Care Transport Provider Practicum. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Prerequisite: completion of EMSA 474. May be taken concurrently with EMSA 475. Focuses on the patient with complicated multisystem health problems in the critical care environment. Provides an opportunity for observation and integration of classroom concepts in a critical care area.

EMSA 491. Special Topics. 4 Hours.

Semester course; variable hours. 1-4 credits. A study of selected topics in EMSA. See the Schedule of Classes for specific topics to be offered each semester.

EMSA 492. Independent Study. 1-4 Hours.

Semester course; variable hours. 1-4 credits. An independent study of selected topics in EMSA.

Microbiology and Immunology (MICR)**MICR 365. Infection and Immunity (Dental Hygiene). 2 Hours.**

Semester course; 2 lecture hours. 2 credits. A study of infectious diseases and the immune system of humans with emphasis on the distribution properties and roles of pathogenic microorganisms and the varied responses of the host, with emphasis on oral pathologies. Principles of prevention, control and chemotherapy of infectious diseases are major components of the course.

Pharmacology and Toxicology (PHTX)**PHTX 400. Drugs and Their Actions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students with junior or senior standing, or permission of instructor. This course is a general survey of pharmacology and related disciplines. The basic principles of pharmacokinetics and pharmacodynamics are presented followed by discussions of neuropharmacology, including drugs for treating neurological disorders and drugs of abuse; immunopharmacology and drugs for pain management; systems pharmacology, including autonomic, cardiovascular, respiratory, renal and endocrine pharmacology; and drugs targeting infectious diseases and cancer chemotherapy. The course will also cover selected topics such as drug design and development, herbal medications and pharmacogenomics.

Physiology and Biophysics (PHIS)**PHIS 206. Human Physiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. Functioning of the human body with emphasis on experimental procedures.

PHIS 301. Engaging in Undergraduate Research. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: PHIS 206, with a grade of A, or PHIS 309, with a minimum grade of B. This course will address the nature of research in the fields of physiology and biophysics and at the same time explore areas and laboratories at VCU that would offer undergraduate research opportunities.

PHIS 302. Engaging in Undergraduate Research II. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: PHIS 301. This course permits students to actively engage in scientific research of interest in physiology and biophysics or in other selected areas of research. Graded as Satisfactory/Unsatisfactory.

PHIS 309. Introductory Quantitative Physiology I. 4 Hours.

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Prerequisite: calculus at the level of MATH 200 and MATH 201. The course is intended for majors in Biomedical Engineering. Other students may enroll with permission of the instructor. This course is a survey course in physiology with emphasis on physical principles. It is a systems analysis of cellular anatomy, physiology and biochemistry which leads into analysis of the nervous system, musculoskeletal system and the digestive system. It is meant to be taken as part of a two-semester series with PHIS 310.

PHIS 310. Introductory Quantitative Physiology II. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: calculus at the level of MATH 200 and MATH 201 and PHIS 309. The course is intended for majors in biomedical engineering. Other students may enroll with permission of the instructor. This course is the second semester of a survey course in physiology with emphasis on physical principles. It includes a systems analysis of the cardiovascular, respiratory, renal and endocrine systems. It is meant to be taken as part of a two-semester series with PHIS 309.

PHIS 461. Introduction to Human Physiology. 3 Hours.

3 lecture hours. 3 credits. Prerequisites: biology, general chemistry and human anatomy. An introductory course to human physiology based on an analysis of organ systems.

Physiology Lab (PHIZ)

PHIZ 206. Human Physiology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: PHIS 206. Functioning of the human body with emphasis on experimental procedures. Not applicable for credit toward the B.S. in Biology.

School of Nursing Nursing (NURS)

NURS 103. Culture, Diversity and Communication in Health Care Settings. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course challenges individuals to recognize how and to what extent diversity affects the interactions that occur within the health care system and to explore communication skills through a more holistic and inclusive framework. Effective communication across diverse groups of people is a necessary skill in today's society, but it is especially important in health care interactions. Most individuals will interact with the health care system in the U.S. at several points in their lives as patients and, for some, in a practitioner or policy-maker role. Interactions with the health care system are often brief, fragmented and sometimes involve multiple people for the care of one patient. It is critical to develop one's awareness for how identity, culture and group membership influence health behaviors and decisions to appropriately advocate for oneself and others.

NURS 104. Conceptualizing Mental Illness in Western Culture. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course explores the conceptualization of mental illness and psychiatric disorders in Western culture. The course covers content related to the history of psychiatry and psychiatric treatment, nosology of psychiatric diagnosis, lived experience of persons with mental illness, societal stigma and beliefs about mental illness, and the concept of recovery and peer-support programs. The course will also highlight the experience of mental illness in persons from marginalized groups. Students will be asked to explore their beliefs, experiences and implicit bias related to mental health and mental illness.

NURS 201. Concepts of Professional Nursing. 2 Hours.

Semester course; 2 lecture hours. 2 credits (2 credits lecture). Prerequisite: admission to the School of Nursing. Provides a foundation for all clinical nursing courses. Content focuses on professionalism, professional nursing values and health care delivery. The core competencies identified by the Institute of Medicine for health care professionals are introduced as critical components of professional nursing practice, and selected concepts related to these core competencies are emphasized. Course activities are structured to establish effective professional behaviors and learning strategies useful across one's professional career.

NURS 202. Technologies of Nursing Practice. 6 Hours.

Semester course; 3 lecture and 90 clinical/laboratory hours. (3 credits lecture and 3 credits clinical/laboratory). 6 credits. Prerequisite: admission to the School of Nursing. This course introduces the student to the study and application of skills and interventions basic to nursing practice. Content focuses on the development of cognitive, psychomotor, affective, interpersonal and communication skills to become effective members of the collaborative health care team. Students will learn how the concepts of nursing process and evidence-based clinical decision-making are integrated into practice. Opportunities are provided for practice and demonstration of selected skills in the laboratory and in clinical settings. This course emphasizes techniques for the safe acquisition and management of patient information.

NURS 261. Health Assessment for Nursing Practice. 3 Hours.

Semester course; 2 lecture and 30 clinical/lab hours. 3 credits (2 credits lecture and 1 credit clinical/lab). Prerequisite: PHIS 206. Pre- or corequisite: NURS 201. Enrollment requires admission to the School of Nursing. This course builds on the biopsychosocial sciences and focuses on development of knowledge, skills and techniques necessary for history-taking and physical examination in adults. Students are introduced to the nursing process and diagnostic reasoning skills are developed through analysis and documentation of assessment data. A laboratory experience provides opportunities for students to integrate communication and problem-solving skills with the health assessment process. The course focuses on the healthy adult patient and emphasizes the diversity of patient populations in health care settings.

NURS 301. Nursing Informatics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: admission to the School of Nursing. This course focuses on data management and use of information and technology to communicate effectively, provide safe and effective patient care and use research and clinical evidence to inform nursing practice decisions. The course emphasizes information literacy and its application to nursing practice and effective health care delivery. Course delivered online.

NURS 307. Foundations of Professional Nursing I. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Enrollment is restricted to students admitted to the School of Nursing. This course explores historical and contemporary trends influencing professional nursing practice within the U.S. health care system. The course focuses on research within the context of nursing's development as a profession and discipline and within the context of evidence-based practice. The research process and analysis of research studies are emphasized.

NURS 308. Foundation of Professional Nursing II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: NURS 301 and NURS 307, both with minimum grades of C. This course focuses on the impact of regulation and accreditation on safe patient care delivery. The course emphasizes concepts related to professional nursing practice and explores selected internal and external forces that influence health care delivery. Students will evaluate current nursing practice within the context of previous nursing education and professional nursing standards. Upon successful completion of this course, proficiency credits for prior nursing education will be conferred. Course delivered online.

NURS 309. Population Health. 3 Hours.

Semester course; 3 credits lecture. 3 credits. Prerequisite: NURS 301 with a minimum grade of C. Enrollment is restricted to students admitted to the School of Nursing. This course focuses on core concepts of population health. Socioeconomic, lifestyle, environmental, genetic and other major determinants of population health are examined. The nurse's role in health promotion, disease and injury prevention across the lifespan are emphasized. The importance of collaboration with populations and other health care professionals is highlighted. Course delivered online.

NURS 325. Nursing of Adults I. 6 Hours.

Semester course; 3 lecture and 90 clinical hours. 6 credits (3 credits lecture and 3 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202, NURS 261 and PSYC 304. All prerequisites must be completed with a minimum grade of C. Focuses on adult and geriatric patients with acute and chronic physical illnesses that have relatively stable trajectories. Provides theoretical and evidence-based foundations for nursing management and related therapeutic regimens. Emphasizes clinical decision-making and technical skills in the provision of care to adult and geriatric patients in a variety of health care settings.

NURS 335. Nursing of Women. 5 Hours.

Semester course; 3 lecture and 60 clinical/laboratory hours. 5 credits (3 credits lecture and 2 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Examines the health needs of women across the life span with an emphasis on the health needs of the childbearing family. Applies nursing process, theory and research with an emphasis on the development of critical thinking skills in the diagnosis and treatment of human responses to health needs of women, neonates and families. Practices clinical skills and applies theoretical knowledge in selected ambulatory care settings for women's health and post-discharge care, and hospital settings for antenatal, intrapartum, post-partum and neonatal experiences.

NURS 345. Nursing of Children. 5 Hours.

Semester course; 3 lecture and 60 clinical/laboratory hours. 5 credits (3 credits lecture and 2 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202, NURS 261 and PSYC 304, all completed with a minimum grade of C. Examines health care needs of children within the context of the family system. Focuses on application of evidence, nursing process, communication skills and critical thinking when providing nursing to children. Applies current theory and evidence related to the child and family environment, developmental capacity, stress, adaptation and resilience. Incorporates standards of care for both well and ill children in the provision of care.

NURS 355. Psychiatric-Mental Health Nursing. 5 Hours.

Semester course; 3 lecture and 60 clinical hours. 5 credits (3 credits lecture and 2 credits clinical laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Examines theoretical, empirical and practical knowledge applied to the prevention and treatment of common psychiatric and mental health conditions encountered in basic nursing practice. Provides students with an integrative perspective from which to incorporate various frameworks of knowledge into practice. Provides didactic knowledge and clinical learning experiences to facilitate students' understanding of actual and potential psychiatric illnesses and mental health problems in individuals, families and communities.

NURS 365. Pathophysiology and Pharmacology I. 3 Hours.

Semester course; 3 lecture hours. 3 credits (3 credits lecture). Prerequisites: anatomy, physiology and microbiology; BIOL 205, PHIS 206; and BIOL 209 or BIOL 303. Enrollment is restricted to students admitted to the School of Nursing. Introduces general and foundational principles in pathophysiology and pharmacology. Examines pathophysiological mechanisms selected diseases, syndromes and/or conditions and integrates related pharmacotherapeutics. Establishes a biophysiological basis for understanding relevant clinical assessments, clinical manifestations and disease trajectories. Provides a foundation for establishing physiological priorities for nursing care.

NURS 366. Pathophysiology and Pharmacology II. 3 Hours.

Semester course; 3 lecture hours. 3 credits (3 lecture credits). Prerequisite: NURS 365 completed with a minimum grade of C. Examines pathophysiological mechanisms in selected human systems diseases, syndromes and/or conditions and integrates related pharmacotherapeutics. Establishes a biophysiological basis for understanding relevant clinical assessments, clinical manifestations and disease trajectories. Provides a foundation for establishing physiological priorities for nursing care.

NURS 371. Evidence-based Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210, NURS 201, NURS 202. All prerequisites must be completed with a minimum grade of C. This overview course focuses on the knowledge and skills required to enact evidence-based practice over one's professional life. Students will examine the relevance of nursing research to evidence-based practice as they review important research concepts and identify factors affecting utilization of evidence in practice. The course formally introduces a model for evidence-based practice with an emphasis on the components of searching for, appraising and synthesizing best evidence.

NURS 396. VCU Health Nursing Internship. 1 Hour.

Semester course; 1 clinical/lab hour (120 hours in clinic/lab). 1 credit (1 credit clinical/lab). May be repeated. Prerequisites: NURS 201, NURS 202 and NURS 261, each with a minimum grade of C. VCU Health may require additional prerequisites. Provides supervised clinical experience in selected VCU Health clinical settings. Many of these settings are not available in traditional curriculum. Introduces students to the work life of a nurse.

NURS 397. International Comparison of Nursing Education and Clinical Care. 1 Hour.

Semester course; 30 clinical hours. 1 credit (1 credit clinical/lab). Enrollment restricted to students in the nursing program of the University of Cordoba or VCU. This course focuses on a comparison of the nature of nursing in two countries: the United States and Spain. Specifically, the course focuses on comparing and contrasting the health care systems and examining the nursing education systems and nursing student experiences in Spain and the U.S. Students from the University of Cordoba will engage in clinical simulations designed to expose them to the high fidelity simulators used in U.S. schools. Additionally, students from both schools will engage in guided observation of nursing care provided to patients in acute care settings and citizens within community-based settings.

NURS 403. Evidence-based Practice in Health Care. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisites: NURS 201 or NURS 307; and STAT 208, STAT 210 or STAT 212, both with a minimum grade of C. This course formally introduces models for evidence-based practice, examines hierarchies of evidence, reviews change theories useful to initiate EBP and identifies individual and organizational resources needed for EBP. Emphasis is on developing skills in retrieving and appraising literature relevant to clinical problems, understanding the research process and critiquing evidence from research publications and other sources to inform evidence-based nursing practice.

NURS 406. Interprofessional Collaborative Practice. 2 Hours.

Semester course; 2 lecture hours (delivered online). 2 credits. Prerequisites: NURS 301 and NURS 307, both with a minimum grade of C. Explores the necessity for interprofessionalism in the contemporary health care environment. Core competencies and best practices for interprofessional collaborative practice are emphasized. Participation in virtual team activities provides students with opportunities to apply interprofessional knowledge, skills and attitudes that improve practice and impact patient care outcomes.

NURS 408. Ethics, Law and Public Policy: Application to Nursing Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: NURS 308 with a minimum grade of C. This course examines ethics, law and public policy that influence nursing practice and the nature and function of the health care system. The emphasis of the course will be on the role of the professional nurse as advocate for patients, families, communities and the nursing profession, as well as an advocate for changes in the health care system as needed. Course delivered online.

NURS 409. Population Health: Application to Nursing Practice. 2 Hours.

Semester course; 2 clinic hours (60 clinical contact hours, delivered online). 2 credits (2 credits clinical/lab). Prerequisite: NURS 309 with a minimum grade of C. This course provides opportunity to apply core concepts of population health in a community within the framework of the nursing process. Epidemiological and population-level data will be used to develop and/or guide interventions in the management of care. The course emphasizes evidence-based approaches to achieving sustainable population health outcomes.

NURS 416. Community Health Nursing. 5 Hours.

Semester course; 3 lecture and 60 clinical hours. 5 credits (3 credits lecture and 2 credits clinical laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 403, all completed with a minimum grade of C. Focuses on development of knowledge and skills essential for care of communities and populations. Explores theory and evidence relevant to the assessment, planning, implementation and evaluation of communities and populations. Incorporates epidemiological principles to population-focused nursing and emphasizes the study and application of community health nursing roles for health promotion and disease prevention. Evaluates the impact of health policy on the public's health. Designs an evidence-based service-learning project to address the health care needs of at-risk populations.

NURS 425. Nursing of Adults II. 6 Hours.

Semester course; 3 lecture and 90 clinical hours. 6 credits (3 credits lecture and 3 credits clinical laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 403, all completed with a minimum grade of C. Focuses on the patient in acute phases of physical illnesses and with complicated multisystem health problems. Provides theoretical and evidence-based foundations for nursing management and related therapeutic regimens. Focuses on the development and application of clinical decision-making and an evidence-based model in the provision of care to acutely ill adults in a variety of settings.

NURS 462. Advanced Pathophysiological Concepts: Application to Patient Care. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisites: NURS 301 and 307, both with a minimum grade of C. This course expands on basic knowledge of normal physiology and common pathophysiologic conditions across the lifespan. The course focuses on advanced knowledge of pathophysiology in relation to complex health care conditions. Integration of appropriate assessment skills and evidence-based pharmacologic and non-pharmacologic interventions are highlighted. The nurse's role in anticipating complications and evaluating clinical outcomes is emphasized.

NURS 477. Leadership and Management in Health Care. 4 Hours.

Semester course; 4 lecture hours (delivered online). 4 credits. Prerequisites: NURS 308 and NURS 403, both with a minimum grade of C. This course examines principles of leadership and management that facilitate coordination and implementation of safe, quality-oriented and ethical patient care. The course emphasizes development of leadership competencies within contexts of the nursing community and interprofessional team in a variety of settings within the contemporary health care delivery system.

NURS 478. Leadership and Management in Health Care: Theory and Application. 3 Hours.

Semester course; 3 lecture hours (3 credits lecture). 3 credits. Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 403, all completed with a minimum grade of C. Integrates principles of leadership and management to prepare students for management, coordination and implementation of safe and ethical patient care in contemporary health care delivery systems. Based on an understanding of nursing's development as a profession, advances enactment of professionalism.

NURS 488. Clinical and Management Decision-making. 3 Hours.

Semester course; 1 lecture and 2 laboratory hours (60 clinical/lab contact hours; delivered online). 3 credits (1 credit lecture, 2 credits clinical/lab). Prerequisites: NURS 406 and NURS 477, both with a minimum grade of C. This course is designed as the culminating or capstone experience for the R.N.-B.S. completion program. The course provides opportunities to evaluate outcomes of baccalaureate education within the context of the clinical practice setting, to apply leadership principles and change theories to clinical and management decision-making, to employ concepts of quality and safety, and to use quality improvement processes in the health care setting.

NURS 491. Special Topics Course. 1-6 Hours.

Semester course; 1-6 lecture hours. 1-6 credits (1-6 credits lecture). Prerequisites: admission to the School of Nursing and permission of instructor. An in-depth exploration of specific topics in nursing theory and practice.

NURS 492. Elective Study. 1-5 Hours.

1-5 credits. Prerequisite: admission to the School of Nursing. Independent study projects planned to meet the learning objectives of the student.

NURS 496. Senior Synthesis. 6 Hours.

Semester course; 2 lecture and 120 clinical/lab hours. Honors section only: 2 lecture, 1 seminar and 120 clinical/lab hours. 6 credits (2 credits lecture and 4 credits clinical/lab). Honors section: 7 credits (2 credits lecture, 1 credit seminar [2 contact hours] and 4 credits clinical/lab). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366, NURS 371, NURS 425, IPEC 501 and IPEC 502. Honors section prerequisite: NURS 512. All prerequisites must be completed with a minimum grade of C. This course is designed as a culminating experience that meets the criteria of the third tier of the VCU Core Curriculum. It prepares students for successful transition into professional practice; thus it requires higher-level cognitive processes that include synthesis of knowledge, evidence and skills from all previous course work and clinical experiences. The course requires that the student consistently enact professional practice, demonstrate competency in standards of care, application of evidence, professionalism and safe and legal practice. This course is taken during the last semester of the nursing program.

NURS 498. Senior Synthesis. 8 Hours.

Semester course; 2 lecture and 6 clinical/lab hours (180 hours in clinic/lab). 8 credits (2 credits lecture and 6 credits clinical/laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366, NURS 403, NURS 425, IPEC 501 and IPEC 502, all with a minimum grade of C. This course prepares students for successful transition into professional practice; thus it requires higher-level cognitive processes that include synthesis of knowledge, evidence and skills from all previous course work and clinical experiences. The course requires that the student consistently enact professional practice, demonstrate competency in standards of care, application of evidence, professionalism and safe and legal practice.

School of Pharmacy**Medicinal Chemistry (MEDC)****MEDC 310. Medicinal Chemistry and Drug Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 302. This course is designed to expose undergraduate chemistry, biology and pre-medicine majors to the history, theory and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs. Crosslisted as: CHEM 310.

Pharmacy (PHAR)**PHAR 201. Introduction to Pharmacy. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open to undergraduate students with an interest in pursuing pharmacy as a career. Consists of presentations related to the profession of pharmacy and the pharmaceutical sciences, preparing for admission to the School of Pharmacy and employment opportunities in the profession after graduation. Graded as pass/fail.

School of Social Work**Social Work (SLWK)****SLWK 200. Building a Just Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Course will introduce students to social justice issues in a local context with a focus on expanding and deepening their knowledge and skills to effect change through active engagement in the community. Course promotes an understanding and critical analysis of multiple forms of oppression in social systems and in personal experience using professional social work perspectives and theoretical frameworks. Selected reference materials and experiential learning activities are designed to enhance student understanding of what constitutes a just community and a just society. The course is offered as service-learning.

SLWK 201. Introduction to Social Work. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Systematic overview of the social work profession. Knowledge of the nature of social work, the fields of social work practice, target populations, overview of social work methods.

SLWK 230. Communication in the Helping Process. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The study of the knowledge, skills and values of effective human communication and interpersonal relations. Includes observation, collection and description of data, verbal and nonverbal communication and the relevance of the above to social work practice. Integrates issues of human diversity in all course content. Emphasizes the demonstration and practice of communication through structured exercises.

SLWK 311. Social Work and Oppressed Groups. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Examines forces leading to individual prejudice and institutional oppression. Focuses on impact of oppression. Provides students with an understanding of diversity and a general knowledge of social work strategies to alleviate oppression and to empower the oppressed.

SLWK 313. Person in Society I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; BIOL 101, BIOL 151 or BIOL 152; PSYC 304; and SOCY 101. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. First of a three-semester sequence on human behavior and the social environment. Uses theoretical concepts and research findings from the behavioral sciences as background for understanding and assessing the functioning of individuals and families in their social environment. Facilitates integration of theory and research with assessment skills associated with basic social work practice. Emphasizes the social systems approach for analyzing the impact of various social problems on individual and family dynamics.

SLWK 330. Person in Society II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Second of three courses on human behavior in the social environment. Uses theoretical concepts from the behavioral sciences to understand the family and small groups as social institutions and social groups as context for human behavior over the life cycle. Designed to provide a theoretical foundation for practice with families and small groups.

SLWK 332. Social Work Practice: Fundamentals. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Corequisite: SLWK 393. Open only to social work majors with junior status. First of three semester practice sequence. Introduces students to basic concepts and skills of beginning-level professional generalist social work practice. Emphasizes application of concepts to the concurrent fieldwork experience.

SLWK 380. Foundations of Social Work Research I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. First of two semester research sequence. Designed to provide an understanding and appreciation of a scientific, analytic approach to building knowledge for practice and for evaluating multilevel service delivery. Provides an overview of the research process, including problem formulation, sampling, design, measurement, data collection, data analysis and dissemination of findings. Presents ethical standards of scientific inquiry with special attention to research with vulnerable and oppressed populations.

SLWK 381. Foundations of Social Work Research II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 380 with a minimum grade of C. Open only to social work majors or minors in social welfare with junior status or by permission of program director or course instructor. The content includes a review of basic statistical univariate and bivariate descriptive and inferential tools for analyzing, interpreting and presenting data for decision-making in generalist social work practice. It also introduces methods for analysis of quantitative and qualitative data and further develops critical-thinking skills in translating empirical research findings into generalist social work practice principles.

SLWK 391. Topics in Social Work. 1-3 Hours.

Semester course; variable hours. 1-3 credits. An in-depth study of a selected topic relevant for professional social work practice. See the Schedule of Classes for the specific topic to be offered each semester.

SLWK 393. Junior Field Instruction. 3 Hours.

Semester course; 3 field experience hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Corequisite: SLWK 332. Enrollment is restricted to social work students with junior status. Students will be required to engage in experiential activities that may include agency-based, simulated or virtual learning opportunities. Intended to facilitate the student's understanding of agency structure and community context, ability to engage in professional relationships, to assess strengths, define problems, set goals and utilize beginning-level practice skills with individuals, families, groups, organizations and communities. Promotes identification as a professional social worker.

SLWK 422. Social Welfare Legislation and Services. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: completion of SLWK 311, 313, 332, 380, 381 and 393, each with a minimum grade of C. Enrollment restricted to majors or minors in social welfare with junior status or by permission of program director or course instructor. Analyzes social welfare policy as related to social values, social problems and social structures. Examines frameworks for policy analysis and for evaluation of programmatic outcomes of policy, with application to contemporary social service and income maintenance policies and delivery systems. Considers the economic, political and ideological factors and processes that affect social welfare legislation, financing and implementation.

SLWK 431. Person in Society III. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Third of three courses on human behavior in the social environment. Builds on the theoretical concepts from the behavioral sciences discussed in SLWK 230 and 313. Focus on understanding organizations and how their purposes, auspices, structure, processes and environment affect the delivery of social services to diverse groups. The community context of social services, including that of the consumer, is emphasized from an open systems theoretical perspective. Students will be expected to integrate course content with their field experience or other agency with which they are familiar. Required of all undergraduate social work majors.

SLWK 441. Social Work Practice I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SLWK 332, 381 and 393, each with a minimum grade of C. Open only to majors with senior standing. Second of a three-semester practice sequence. Review of interviewing and problem-solving for generalist social work practice with diverse populations. Emphasis on agency structure and function, skills of engagement and problem definition, assessment, planning for intervention, and evaluation. Use of material from concurrent fieldwork practice to facilitate integration of learning.

SLWK 442. Social Work Practice II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SLWK 441 and SLWK 494, each with a minimum grade of C. Open only to majors with senior standing. Third of a three-semester practice sequence. Emphasizes planning and implementing change with diverse populations, professional ethics, professional development, termination and evaluation of generalist social work practice. Use of case material from concurrent fieldwork practice to facilitate integration of learning.

SLWK 492. Independent Study. 1-3 Hours.

Semester course; 1, 2 or 3 lecture hours. 1, 2 or 3 credits. Prerequisites: junior or senior standing, and permission of instructor. Under supervision of a faculty adviser, whose consent is required to register, study of a topic of concern to the student. Each student must present his or her findings in writing or pass an oral examination.

SLWK 494. Senior Field Instruction I. 3 Hours.

Semester course. 3 credits. Prerequisite: completion of SLWK 332, 381 and 393, each with a minimum grade of C. Corequisite: SLWK 441. Open only to majors with senior status. Fourteen hours per week in a community agency under the supervision of an agency-based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.

SLWK 495. Senior Field Instruction II. 3 Hours.

Semester course. 3 credits. Prerequisite: completion of SLWK 494 with a minimum grade of C. Corequisite: SLWK 442. Open only to majors with senior status. Fourteen hours per week in a community agency under the supervision of an agency-based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.

SLWK 499. Senior Seminar. 1 Hour.

Semester course. 1 credit. Corequisites: SLWK 442 and 495. Typically to be taken in the last semester of the student's senior year. This course serves as an academic culmination of the undergraduate social work program. The student will compile a portfolio of B.S.W. program academic materials, complete a professional self-assessment and resume and participate in the development of a comprehensive generalist intervention plan with regard to a specified social problem.

VCU Life Sciences

Bioinformatics (BNFO)

BNFO 101. Introduction to Scientific Computing. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to bioinformatics majors. This course will introduce students to basic principles and skills for using a computer to solve scientific problems. It is hands-on course and does not assume any special prior knowledge or skill with computers. Students completing the course will become familiar with and develop skills and practical knowledge of how to use common computer-based command-line tools and systems critical for effective scientific computing.

BNFO 125. Disease and Human Ancestry. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course introduces the role that disease has played in human existence. A key part of this understanding comes from new DNA sequencing and genomic data analysis tools that provide information about our ancestry and origin, as well as about the ancestry and history of disease organisms that have co-evolved with us. The vast amount of new data has opened controversial doors to social and ethical implications, such as questions of race and discrimination, and teach us how to fight emerging disease at local and global levels. This course will discuss these topics through case examples of different diseases from parasites (e.g., malaria), bacteria (e.g., bubonic plague, tuberculosis and syphilis) and viruses (e.g., smallpox, influenza and AIDS).

BNFO 191. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program.

BNFO 193. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits, with the provision that no more than nine combined credits of BNFO 191 and BNFO 193 can apply toward graduation. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program. Graded as pass/fail.

BNFO 201. Computing Skills and Concepts for Bioinformatics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or 200 with a minimum grade of C, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An introduction to computation in bioinformatics, including basics of data representation, and computer organization, as well as programming in Python or other appropriate scripting language. Bioinformatics applications in the literature will be discussed. Guest speakers will share bioinformatics career experiences and opportunities.

BNFO 251. Phage Discovery I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will purify phage from soil, visualize phage using electron microscopy and isolate genomic material for nucleic acid sequencing. Registration by override only. Crosslisted as: LFSC 251.

BNFO 252. Phage Discovery II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will learn about the genomes of viruses infecting bacteria. Students will be given the genome sequence of a novel virus, which will be the basis for a series of computer-based analyses to understand the biology of the virus and to compare it with other viruses that infect the same host. Registration by override only. Crosslisted as: LFSC 252.

BNFO 291. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits, with the provision that no more than nine combined credits of BNFO 291 and BNFO 293 can apply toward graduation. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program.

BNFO 292. Independent Study. 1-2 Hours.

Semester course; variable hours. 1-2 credits. May be repeated for a maximum total of 6 credits. Prerequisite: permission of instructor. A course designed to provide an opportunity for independent readings of the bioinformatics literature under supervision of a staff member.

BNFO 293. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits, with the provision that no more than nine combined credits of BNFO 291 and BNFO 293 can apply toward graduation. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program. Graded as pass/fail.

BNFO 300. Molecular Biology Through Discovery. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The course aims to expand students' "ignorance," a prerequisite for success in science, by confronting them with the interface between the known and the unknown, stressing the process by which the boundary is traversed. It will do so using as the raw material the study of molecular biology, an essential groundwork for bioinformatics.

BNFO 301. Introduction to Bioinformatics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BNFO 201 or permission of instructor. The course will present a practical and theoretical introduction to the tools and techniques needed to obtain and interpret a variety of genome-related data types. The course will include several bioinformatic methods underlying nucleotide and protein sequence alignment, statistical methods for data visualization in R, the types of experimental results commonly encountered in bioinformatics data analysis and the public databases where these data can be accessed.

BNFO 380. Introduction to Mathematical Biology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: MATH 200 and BIOL 151, both with a minimum grade of C, or permission of instructor. An introduction to mathematical biology. Various mathematical modeling tools will be covered and implemented in a range of biological areas. Additionally, the collaborative research process will be presented and discussed. Crosslisted as: MATH 380.

BNFO 391. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits, with the provision that no more than nine combined credits of BNFO 391 and BNFO 393 can apply toward graduation. A detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program.

BNFO 393. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of nine credits, with the provision that no more than nine combined credits of BNFO 391 and BNFO 393 can apply toward graduation. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program. Graded as pass/fail.

BNFO 411. Ethical Issues in Life Sciences. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course will introduce fundamentals in ethical conduct with a focus on interdisciplinary application to the life sciences, with attention paid to the design, collection, analysis and dissemination of bioinformatic datasets.

BNFO 420. Applications in Bioinformatics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CMSC 245 or 255 and BNFO 301. Capstone course. Students will integrate biological, computational and quantitative skills to complete bioinformatics projects in a professional team-problem-solving context. Course includes explicit instruction in the conduct of research as well as a review of applicable strategies, methods and technologies. Written and oral presentation is emphasized, with systematic feedback and practice opportunities provided.

BNFO 440. Computational Methods in Bioinformatics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CMSC 255 and 256; BNFO 301, or permission of instructor. An introduction to mathematical and computational methods in bioinformatics analysis. Topics include but are not limited to operating systems, interfaces, languages, SQL, search algorithms, string manipulation, gene sequencing, simulation and modeling, and pattern recognition. Students will be exposed to Maple, Matlab, SPSS, E-cell, BioPerl, Epigram and C as part of the requirements of this course.

BNFO 491. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of 12 credits, with the provision that no more than 12 combined credits of BNFO 491 and BNFO 493 can apply toward graduation. A detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program.

BNFO 492. Independent Study. 1-4 Hours.

Semester course; variable hours. A minimum of three hours of supervised activity per week per credit is required. 1-4 credits. May be repeated for a maximum total of 6 credits. Prerequisite: BIOL 218. Projects should include data collection and analysis, learning bioinformatics-related research techniques, and mastering experimental procedures, all under the direct supervision of a faculty member. A final report must be submitted at the completion of the project. Graded as pass/fail.

BNFO 493. Special Topics in Bioinformatics. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for a maximum total of 12 credits, with the provision that no more than 12 combined credits of BNFO 491 and BNFO 493 can apply toward graduation. A detailed study of a selected topic in bioinformatics unavailable as an existing course. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program. Graded as pass/fail.

BNFO 496. Undergraduate Teaching Assistantship in Bioinformatics. 1-2 Hours.

Semester course; 1-2 field experience hours. 1-2 credits. May be repeated for a maximum total of two credits. Enrollment requires permission of instructor and a minimum grade of B in the course the student will TA. Student will work with course instructor to implement course objectives. Typical duties involve media preparation, answering questions, providing feedback on course assignments and peer mentoring. Provides exposure to the practice, possibilities, rewards and responsibilities of the act of teaching. Graded as pass/fail.

BNFO 497. Research and Thesis. 1-4 Hours.

Semester course; variable hours. A minimum of three hours of supervised activity per week per credit is required. 1-4 credits. May be repeated for a maximum total of 6 credits. Prerequisites: BIOL 218, junior or senior status. Projects should include data collection and analysis, learning bioinformatics-related research techniques, and mastering experimental procedures, all under the direct supervision of a faculty member. A written thesis of substantial quality is required at the completion of the research.

Environmental Studies (ENVS)**ENVS 101. Introduction to Environmental Studies I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to environmental studies majors. Study of contemporary issues related to environmental studies including sustainability, biological conservation, global change and an overview of the core earth systems.

ENVS 102. Introduction to Environmental Studies II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENVS 101 or permission of instructor. Enrollment is restricted to environmental studies majors. Studies of contemporary issues related to government policy and environmental issues at local to international scales.

ENVS 105. Physical Geology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A descriptive approach to physical geology dealing with the history and structure of the earth, catastrophic events and geology as it relates to the contemporary environment. An optional laboratory, ENVZ 105, may be taken with this course.

ENVS 201. Earth System Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introduction to the processes of and linkages among the major systems that drive planet Earth. The biosphere, geosphere, hydrosphere, atmosphere and sociosphere are presented as dynamic and interdependent systems.

ENVS 222. Electronic Portfolios. 1 Hour.

Semester course; 1 lecture hour (delivered online). 1 credit. This online course will guide individuals in developing an electronic portfolio consisting of student-curated collections of specific academic work, bibliographic information and a curriculum vitae used throughout their academic career. Graded as pass/fail.

ENVS 260. Outdoor Leadership. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide an introduction to the concepts and skills needed to work and lead teams in outdoor settings. Topics include the historical and philosophical foundations of outdoor leadership, outdoor teaching and facilitation, safety and risk management, and environmental stewardship. The course includes classroom and field application components.

ENVS 265. Paths to Environmental Leadership. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisites: ENVS 101 and ENVS 102, both with a minimum grade of B. This course focuses on personal leadership development, leadership in the field of environmental studies, grant writing and revision, and the peer-review process. Discussions with guest speakers who are leaders in various environmental fields, additional readings and self-directed exploration of leadership figures will broaden our understanding of environmental leadership. Students will then use the Udall Undergraduate Scholarship application as a tool to begin to develop their own vision of environmental leadership and develop experience in grant writing and peer review.

ENVS 291. Special Topics in Environmental Studies. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated with different topics for a maximum of 12 credits. An introductory investigation into a selected topic salient to environmental studies. See the Schedule of Classes for specific topics being offered each semester.

ENVS 300. Sustainable Societies: James River Basin. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course explores the 25 most critical social, economic and environmental issues in the region in a global context. It examines how people are tackling the issues of sustainably and turning them into opportunities.

ENVS 301. Introduction to Meteorology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introductory course designed to provide the student with an overview of the structures and processes that cause weather. These include atmospheric circulations and the weather patterns that we observe. Emphasis will be placed upon the tracking and display of weather phenomena, as well as their forecast movement and impact.

ENVS 310. Introduction to Oceanography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An introductory course designed to provide the student with an overview of the structures and processes of the world's oceans. These include the systems that impact the oceans: the hydrosphere, the atmosphere, the geosphere, the biosphere and the sociosphere. Emphasis will be placed upon hands-on techniques for understanding these systems, including online simulations and in-class activities.

ENVS 311. Politics of the Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crises it centers on. Special attention will be given to the constitutional, political and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes. Crosslisted as: POLI 311.

ENVS 314. Man and Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. Crosslisted as: INTL 314.

ENVS 315. Energy and the Environment. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to non-physics majors with junior or senior standing; not applicable to the physics major. A study of society's demands for energy, how it is currently being met, the environmental consequences thereof and some discussion of alternatives. Crosslisted as: PHYS 315.

ENVS 321. Cartography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 131, STAT 208, or higher level MATH or STAT course. This course provides an introduction to the art and science behind the presentation of spatial information using maps and charts. Students will develop visual thinking and communication skills while applying cartographic theory to address contemporary practical problems. Students must have a laptop able to run ArcGIS Online.

ENVS 330. Environmental Pollution. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and BIOL 152. The study of pollution in the environment with emphasis on the procedures for detection and abatement.

ENVS 332. Environmental Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 204. An interdisciplinary review of domestic and international environmental problems and their underlying causes, current management frameworks, alternative management approaches and strategies, and barriers to their implementation. Other topics include: environmental history and economics, population growth, natural resources use, biodiversity, pollution. Crosslisted as: URSP 332.

ENVS 335. Environmental Geology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENVS 105 or URSP 204. The relationship between humankind and the physical environment, earth materials and processes, geological hazards, water, mineral and energy resources, land use, and environmental health and law.

ENVS 343. Data Literacy. 4 Hours.

Semester course; 4 lecture hours. 4 credits. Prerequisite: STAT 210. This course takes a hands-on, collaborative approach for students to develop proficiency in the application of data management skills, static and dynamic data visualization, and quantitative analyses of environmental and geospatial datasets. Students will be required to bring their own laptop and analyses and visualization will be performed using the R statistical programming language.

ENVS 355. Water. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 or ENVS 330 or permission of instructor. The course takes an ecosystem approach to understanding the functioning of streams, rivers, lakes, estuaries and oceans. The course complements curricula in biology and environmental studies and is specifically geared toward students with an interest in the water resources profession.

ENVS 360. Outdoor Programming and Event Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide students with information and practical experience required to successfully design, promote, implement and evaluate outdoor experiential programming across a range of contexts.

ENVS 361. Outdoor Team Building and Group Facilitation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide students with the theory and practice of developing and deploying a successful outdoor recreational, educational, interpretive or adventure experience. In doing so, students will learn about group dynamics, team building, risk management and inquiry-based learning techniques.

ENVS 368. Nature Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, ENGL 202, ENGL 203, ENGL 204, ENGL 205, ENGL 206, ENGL 211, ENGL 215, ENGL 236, ENGL 250, ENGL 291, ENGL 295 or NEXT 240. A study of the literary genre of nature writing in English. Crosslisted as: ENGL 368.

ENVS 370. Applications of Conservation Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENVS 102; and STAT 210 or ENVS 343. The field of conservation science is focused on protecting biodiversity through the promotion of both social and ecological processes. This course will provide a foundation in the real-world applications of conservation science and demonstrate how data are essential to effective conservation of natural resources.

ENVS 391. Special Topics in Environmental Studies. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated with different topics for a maximum of 12 credits. A detailed investigation into a selected topic salient to environmental studies. See the Schedule of Classes for specific topics being offered each semester.

ENVS 401. Meteorology and Climatology. 3 Hours.

Semester course; 3 lecture hours. Prerequisite: PHYS 201 or PHYS 207. A basic, semiquantitative course in the elements of weather and climate, their driving forces and their spatial and temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather and climate.

ENVS 411. Oceanography. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152 and CHEM 102. A basic course in the physical, chemical and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments and ecology.

ENVS 421. Environmental Data Visualization. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 314. This is an introductory course in using databases and geospatial technology. The course will introduce students to computer technology, project development and management skills, database management skills, and geospatial technology. Students will use in-class applied environmental analyses to guide skill-set development. The course will introduce the students to working with data in various formats and using the ArcGIS software suite to visualize the data. Students will be introduced to Microsoft Excel, Microsoft Access, ESRI ArcGIS software suite and ESRI ArcGIS Online.

ENVS 430. Invasive Species Management. 3 Hours.

Semester course; 1 lecture and 2 field experience hours. 3 credits. Prerequisite: BIOL 317. This course explores the ecological, political and regulatory issues surrounding invasive species in the city of Richmond and the commonwealth of Virginia. Students will be introduced to the James River Park System habitat restoration plan, a long-term strategy to manage non-native invasive species. Individuals will work directly with environmental professionals, park personnel and community partners to restore natural areas.

ENVS 460. Wilderness First Responder. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is intended for anyone working in a position of leadership in an outdoor setting or for individuals who want a high level of wilderness medical training for working in remote field settings, extended personal backcountry trips or expeditions. The course is a comprehensive and in-depth look at the standards and skills of dealing with response and assessment, musculoskeletal injuries, environmental emergencies and survival skills, soft tissue injuries, and medical emergencies. Additional topics, such as CPR, are also included. Wilderness First Responder training is the industry standard for those who work as government and nongovernment field technicians, backcountry trip leaders, camp counselors, mountain guides, river guides and ski patrollers.

ENVS 461. Wilderness Policy and Practice. 3 Hours.

Semester course; 2 lecture and 1 field experience hours. 3 credits. This course takes a multidisciplinary and experiential look at the concept of wilderness. Learning spans from the classroom to a first-hand wilderness experience, and materials include environmental law, natural resources management, environmental philosophy and ethics, regional and local history, and conservation science. Throughout students will focus on the intersection between society, biodiversity and the wilderness concept in principle and practice.

ENVS 490. Research Seminar in Environmental Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: senior standing and at least 12 hours of approved environmental studies course work. An interdisciplinary examination of problems and issues central to environmental studies. Environmental research of VCU faculty will be reviewed, and selected local environmental problems will be studied. Each student will complete a research project focusing on a specific environmental question.

ENVS 491. Topics in Environmental Studies. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth study of a selected environmental topic. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

ENVS 492. Independent Study. 1-3 Hours.

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all topics courses. Prerequisite: junior or senior standing, and permission of instructor.

ENVS 493. Environmental Studies Internship. 1-3 Hours.

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. Prerequisite: junior or senior standing, and permission of instructor. Graded as pass/fail.

ENVS 499. Environmental Studies Capstone Experience. 0 Hours.

Semester course; variable hours. 0 credits. Corequisite: ENVS 490, ENVS 491 (when topics implement core competencies required for a capstone experience and are approved by the director of the Center for Environmental Studies), ENVS 492 or ENVS 493. Enrollment restricted to students who have completed 90 hours of undergraduate course work. Any of the corequisite courses qualify as a capstone experience if taken with this course. Graded as pass/fail.

Environmental Studies Lab (ENVZ)**ENVZ 105. Physical Geology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: ENVS 105, an optional laboratory course consisting of experiments and activities related to ENVS 105.

ENVZ 335. Environmental Geology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Corequisite: ENVZ 335. Required for environmental science majors enrolled in ENVZ 335; optional for other majors. Attendance on one Saturday morning field trip required. Laboratory exercises coordinated with ENVZ 335 lectures.

ENVZ 401. Meteorology and Climatology Laboratory. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisite: ENVZ 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

Life Sciences (LFSC)**LFSC 101. Academic and Career Options in Life Sciences. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Students interested in the life sciences at VCU are faced with an enormous variety of academic options from bioinformatics and biomedical engineering to exercise science and nursing. Students outside of these programs have post-graduate opportunities in the life sciences, such as health care administration and government policy. This course will introduce students to an overview of all of the academic programs in life sciences available at VCU and their associated potential career options. Graded as pass/fail.

LFSC 191. Special Topics in Integrative Life Sciences. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for credit with different topics. A 100-level study of a selected topic in integrative life sciences. Students will find specific topics and prerequisites for each special topics course listed in the Schedule of Classes. If multiple topics are offered, students may elect to take more than one.

LFSC 251. Phage Discovery I. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will purify phage from soil, visualize phage using electron microscopy and isolate genomic material for nucleic acid sequencing. Registration by override only. Crosslisted as: BNFO 251.

LFSC 252. Phage Discovery II. 2 Hours.

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will learn about the genomes of viruses infecting bacteria. Students will be given the genome sequence of a novel virus, which will be the basis for a series of computer-based analyses to understand the biology of the virus and to compare it with other viruses that infect the same host. Registration by override only. Crosslisted as: BNFO 252.

LFSC 301. Integrative Life Sciences Research. 3 Hours.

Semester course; 2 lecture and 1 recitation hours. 3 credits. Pre- or corequisite: UNIV 200 or HONR 200. Students will leave this course knowing enough about science and the process of science to feel confident in critically evaluating scientific information and/or embarking on their own process of discovery with a faculty mentor. They will gain an appreciation of the interdisciplinary and complex nature of life sciences and will hone their critical thinking about how science interacts with and informs society.

LFSC 307. Community Solutions: Multiple Perspectives. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Explores possibilities for addressing social concerns of the Richmond community by understanding the complex nature of social issues as essential to their successful amelioration via perspectives of life and social sciences. Toward this end, expertise from the social sciences, the life sciences and the community are integrated. Includes a service-learning experience (a 20-hour volunteer requirement). Crosslisted as: PSYC 307.

LFSC 391. Special Topics in Integrative Life Sciences. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for credit with different topics. A 300-level study of a selected topic in integrative life sciences. Students will find specific topics and prerequisites for each special topics course listed in the Schedule of Classes. If multiple topics are offered, students may elect to take more than one.

LFSC 401. Faith and Life Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Open to students of any school or program. Explores the complex relationships between faith traditions and the life sciences. Topics include epistemology, impact of life sciences on ideas of fate and responsibility, limits of science and technology, and scientific and religious perspectives on human origins, consciousness, aggression, forgiveness, health, illness and death. Crosslisted as: RELS 401.

LFSC 491. Special Topics in Integrative Life Sciences. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. May be repeated for credit with different topics. A 400-level study of a selected topic in integrative life sciences. Students will find specific topics and prerequisites for each special topics course listed in the Schedule of Classes. If multiple topics are offered, students may elect to take more than one.

University College**Relevant Experiential and Applied Learning (REAL)****REAL 300. Principles of Community-engaged Leadership. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students in the VCU Transform living-learning program. This course will introduce the knowledge, skills and attitudes needed to be a successful community-engaged leader in an interconnected, global society. Students will use an interdisciplinary lens to understand and analyze principles and practices of leadership, community engagement and global citizenship. They will also integrate academic and experiential learning through analyses of current events, a critical reflection and an individual digital presentation.

REAL 301. Leadership Identity and Intercultural Competence. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: REAL 300. Enrollment is restricted to students in the VCU Transform living-learning program. This course will provide the opportunity for students to formulate and analyze various aspects of their own self-identity as a community-engaged leader and then to develop intercultural competencies to relate effectively to diverse others.

REAL 310. Pathways to Experiential Learning. 1 Hour.

Semester course; 1 field experience hour. 1 credit. Enrollment is restricted to students in the VCU Transform living-learning program. In this seminar students will verify and document their participation in experiential learning opportunities, including extended community service, undergraduate research projects, peer leadership and other noncredit experiences in order to receive academic credit for them toward the LLP certificate of completion. Students will also reflect on their experiential learning and produce an artifact for the LLP e-portfolio.

REAL 399. Student-Directed Experience. 3 Hours.

Semester course; 0-3 independent study hours. 0-3 credits. Enrollment is restricted to students with at least sophomore standing with approval of the REAL office. This course supports student completion of a self-directed experiential learning project in one of the five REAL learning domains: academic discipline, skills and knowledge; professional identity and career preparation; community or civic identity; diversity and inclusion; and global knowledge. The student's satisfaction of the course requirements is determined by a VCU faculty/staff supervisor. In cases where the project engages an external partner (an employer or community organization, for example), an evaluation from that partner may also be administered to determine satisfaction of course requirements. Graded as pass/fail.

REAL 400. Career Management. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: REAL 300 and REAL 301. Enrollment is restricted to students in the VCU Transform living-learning program. This course will develop students' career management competency, defined by the National Association of Colleges and Employers as: Identify and articulate one's skills, strengths, knowledge and experiences relevant to the position desired and career goals, and identify areas necessary for professional growth. Students will learn to navigate and explore job options; understand and take the steps necessary to pursue opportunities; and understand how to self-advocate for opportunities in the workplace. The course will also comprehensively introduce the e-portfolio and allow students to begin to formulate the direction and beginnings of this culminating capstone project, to be completed during the subsequent course. Students will also continue to reflect on their self-identity and their experiential learning.

REAL 401. Capstone Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: REAL 300, REAL 301 and REAL 400. Enrollment is restricted to students in the VCU Transform living-learning program. In this seminar students will integrate their learning into a comprehensive e-portfolio to showcase their signature experiential learning and present it at a public symposium. Students will also reflect critically on their entire living-learning program experience and highlight key moments and learning as a result of their participation.

REAL 491. Special Topics in Leadership and Experiential Learning. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit. Enrollment is restricted to students in the VCU Transform living-learning program. Students will study and discuss advanced and contemporary material related to leadership practice and theory. Topics will vary by semester.

REAL 492. Independent Study in Leadership and Experiential Learning. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. May be repeated for credit. Enrollment is restricted to students in the VCU Transform living-learning program. The course provides an opportunity for living and learning program students to learn more about a specific topic of interest that is not included among existing VCU course offerings. Study is conducted under the guidance of a VCU faculty mentor who assists the student in planning and implementing the course of study. The independent study topic should be selected in consultation with the student's academic adviser to ensure that the proposed course of study is relevant to the student's educational goals and VCU Transform. The faculty mentor must agree to be available to the student throughout the duration of the course.

University College (UNIV)**UNIV 101. Introduction to the University. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Designed to orient new students to the traditions, purposes and expectations of a university education. Students will assess their expectations and evaluate their academic strengths and goals. Through lectures, guest speakers and individual projects, students will learn of VCU resources designed to help them solve problems and to achieve a rewarding and successful academic program.

UNIV 102. Investigations in Learning. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment restricted to first-year students who want to improve college success skills. The student will create an individualized action plan to improve academic performance.

UNIV 103. Education and Career Planning. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a total of 3 credits. An education- and career-planning course focusing on the process of researching and selecting a major. Through course work, research, guest speakers and informational interviewing, students will discover various educational and career options. Topics will include interest, abilities and work-values assessments, decision-making models and career development theories. One- and two-credit versions of the course are offered with correspondingly reduced meeting schedules.

UNIV 111. Focused Inquiry I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Utilizes contemporary themes to give students opportunities and practice in writing, critical thinking, oral presentation, collaborative learning, information retrieval and evaluation, and social and civic responsibilities. Incorporates common reading materials and course activities across all sections.

UNIV 112. Focused Inquiry II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 111 or equivalent. Builds on skills introduced in UNIV 111 by providing practice in expository essays, argument and contextual analysis. Focuses on practice in writing in a variety of genres, framing writing according to both purpose and audience and identifying academically valid sources. Students must earn a minimum grade of C to receive credit for this course.

UNIV 151. Focused Learning Workshop in BIOL 151. 1-2 Hours.

Semester course; 3 workshop hours. 1-2 credits. Corequisite: BIOL 151. Designed to assist students in improving their understanding of complex biology material. Will supplement the BIOL 151 class lecture. Course assists students with integrating how-to-learn with what-to-learn for BIOL 151. Includes both discussion and study-skills strategies. Students required to complete homework assignments and to demonstrate mastery of specific study techniques. In addition to the semester-long 2-credit offering, a 1-credit course is opened to students after the first BIOL 151 exam.

UNIV 152. Focused Learning Workshop in BIOL 152. 1-2 Hours.

Semester course; 3 workshop hours. 1-2 credits. Corequisite: BIOL 152. Designed to assist students in improving their understanding of complex biology material. Will supplement the BIOL 152 class lecture. Course assists students with integrating how-to-learn with what-to-learn for BIOL 152. Includes both discussion and study-skills strategies. Students required to complete homework assignments and to demonstrate mastery of specific study techniques. In addition to the semester-long 2-credit offering, a 1-credit course is opened to students after the first BIOL 152 exam.

UNIV 191. Student Success Special Topics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different content for a maximum of three credits. Transitioning from high school to VCU as a first-year student brings both excitement and nervousness. VCU offers a menu of first-year courses that address either motivators or barriers to student success. These courses are taught by academic advisers, financial aid counselors, campus leaders and student affairs professionals interested in connecting to first-year students based on their interests, fears, aspirations and career goals. Students who complete these courses historically earn higher GPAs and graduate faster with less debt.

UNIV 200. Inquiry and the Craft of Argument. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or HONR 250 with a minimum grade of C. A research and writing process course that emphasizes critical analysis, elements of argument, inquiry-based research skills, writing conventions of academic argument and the presentation of argument and research into new mediums. Students must earn a minimum grade of C to receive credit for this course.

UNIV 211. Food for Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An interdisciplinary exploration of food using analytical lenses from sociology, anthropology, philosophy, art, literature, history, political science, psychology, economics and religious studies.

UNIV 213. The Truth About Lying. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will engage in collaborative inquiry to critically consider their own beliefs, common notions of ethical behaviors and practical standards through exploring the nature and function of lying. Students will work together to build a foundation of knowledge on the subject of lying and investigate a broad range of disciplines through the lie to question, abandon and embrace value judgments imperative to their daily lives.

UNIV 217. Finding Your Voice in Contemporary Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 111 and 112 or HONR 200 or HONR 250. Focuses on strategies for expression in contemporary society. This course examines the messages that are conveyed in our society and how people decode and understand those messages. Course will focus on popular culture themes and practical problem-solving.

UNIV 222. Pseudoscience. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course critically evaluates controversial fringes of scientific inquiry, such as those related to paranormal investigations and quack medicine. By engaging with topics chosen from astronomy, anthropology, biology, mathematics, medicine, philosophy and psychology, students will apply critical thinking skills to a variety of strange and provocative ideas.

UNIV 250. Undergraduate Teaching Assistant Program. 1 Hour.

Semester course; 1 lecture hour. 1 credit. May be repeated for up to two credits. Prerequisite: UNIV 112 with a minimum grade of B. Utilizes classroom practice to further the core skills developed in UNIV 111 and 112 (writing, critical thinking, oral presentation, collaborative learning, information retrieval and evaluation, and social and civic responsibilities) as well as exposing students to the practice, possibilities, rewards and responsibilities of the act of teaching. Enrollment will be arranged through faculty mentors.

UNIV 251. Undergraduate Teaching Assistant Program. 1 Hour.

Semester course; 1 lecture hour. 1 credit. May be repeated for up to two credits. Prerequisite: UNIV 200 or HONR 200 with minimum grade of B. Utilizes classroom practice to further the core skills developed in UNIV 200 (including writing, critical thinking, collaborative learning, information retrieval and evaluation) as well as exposing students to the practice, possibilities, rewards and responsibilities of the act of teaching. Enrollment will be arranged through faculty mentors.

UNIV 270. Introduction to Leadership Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to students participating in the Emerging Leaders Scholarship Program or enrolled in VCU LEAD. Introductory study of leadership theory, group dynamics and human relationships used in volunteer organizations and leisure delivery systems. Foundations of leadership/follower behavior, advanced facilitation techniques and techniques of decision-making, problem-solving, conflict management and program evaluation will be examined.

UNIV 291. University Special Topics. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in subject and competency areas related to the core curriculum program not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

UNIV 299. What's the Big Idea?. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Each section in this interdisciplinary course will focus on a particular "big question" that has intrigued thinkers throughout time and across cultures. As students move from personal to global – and from theoretical to practical – investigations of the question, they will come to understand inquiry as a complex cycle of questioning, gathering, examining, interpreting, comparing, analyzing and evaluating, with important application to decision-making and problem-solving in the real world.

UNIV 301. Interdisciplinary Theory and Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students in the University College's Bachelor of Interdisciplinary Studies program. This course will familiarize students with the history, theory and practice of interdisciplinarity. It is a core component of the Bachelor of Interdisciplinary Studies curriculum and provides an overview of the integrative intellectual pursuit that is interdisciplinary studies. This course immerses students in the breadth of interdisciplinary synthesis and integration of research methods appropriate to their area of interdisciplinary study.

UNIV 303. Interdisciplinarity in the Professional World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an overview of strategies for academic success and career-readiness within the context of interdisciplinarity in the 21st-century university and professional world. Students will leverage the work they are doing in their focus areas as they begin to explore or refine their pre-professional interests and goals. Students will research specific interdisciplinary intellectual preparation and professional skills and expectations aligned with the goals.

UNIV 305. Interdisciplinary Social Innovation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides students with the opportunity to learn about community issues through service to and partnerships with organizations that further social causes. Students will form interdisciplinary teams to design projects for these organizations to bring sustainable change to the community. The course emphasizes design thinking and leadership development and foregrounds skills for collaborative problem-solving and project management.

UNIV 350. Peer Leadership Program. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for up to six credits. Prerequisite: UNIV 250 and/or UNIV 251 with a minimum grade of B (must have a total of two credits in courses listed). Building on skills introduced in the prerequisite(s), this course gives students hands-on experience in the practice of creating and maintaining student engagement.

UNIV 391. University Special Topics. 1-4 Hours.

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in subject and competency areas related to the core curriculum program not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

UNIV 450. Career Readiness Synthesis. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to students who have completed 14 hours of course work required for the interdisciplinary career readiness skills minor, who are enrolled in the interdisciplinary studies major or by permission of the program. This course enables students to reflect upon the courses and co-curricular experiences they have completed through the ICRS minor and serves as the capstone course for the minor. Students will explore how those courses and experiences have helped them develop the skills and competencies needed for post-graduation employment, and they will synthesize evidence of those skills into an eportfolio to share with potential employers and graduate/professional programs.

UNIV 492. Independent Study. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. May be repeated for credit. This course is designed to provide upper-level B.I.S. students the opportunity to explore and investigate a complex interdisciplinary problem or area of research beyond available curricular offerings. Students must discuss their specific interest with the B.I.S. faculty adviser, secure an approved faculty mentor and complete the independent study proposal form (with their faculty mentor) prior to receiving an override for course registration.

UNIV 493. Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits (50 field site contact hours per credit). May be repeated for credit with different internships for a maximum of 9 credits. Restricted to students who have completed 24 credits in their focus areas, earned junior or senior status and obtained approval of placement site from their faculty adviser. The B.I.S. internship is designed to help students have a real-world learning experience that will help move them in the direction of their desired future career. It is intended to provide opportunities for the student to apply classroom knowledge and acquire professional skills. The internship site(s) selected must be compatible with one or more of the focus areas of the student's major and should help to build skills toward a future professional or academic path of interest to them.

UNIV 499. BIS Senior Capstone. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: UNIV 301. Enrollment is restricted to students in the University College's Bachelor of Interdisciplinary Studies program who have senior standing and have completed 18 hours in their focus area. Students will synthesize and evaluate the theoretical, methodological and substantive issues discovered during course work in the focus area, producing both an ePortfolio and a capstone project.

da Vinci Center for Innovation

Human-centered Design (HCDN)

HCDN 351. Introduction to Human-centered Design. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. This course explores the human-centered design paradigm from a broad perspective. Students are exposed to human-centered design thinking and experiential client activities. Topics include human-centered design principles, methodologies, user research, data collection and assessment, inspiration, ideation, and implementation phases, and critical- and creative-thinking models.

HCDN 352. Human-centered Design Methods. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: HCDN 351. This course explores human-centered design methods and an experiential client interaction. Students will be challenged to develop, utilize and assess several ways of knowing and thinking about how to effectively contextualize, formulate, conduct, analyze and disseminate the results derived from particular engagements with human-centered design and their processes in the context of research and design.

HCDN 353. Human-centered Design Through Service Learning. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: HCDN 352. This course allows students to engage in an experiential nonprofit client scenario working through human-centered design methods that solve a community need specific to social innovation. Lecture is coupled with 20 hours of service-learning client engagement.

HCDN 451. Interaction Design and Prototyping. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HCDN 353. Investigates the practice of interaction design using an experiential project-oriented approach. Develops expertise in design, development and critique of solutions for digital platforms and consumer products. Examines issues such as interaction theory, requirements and specifications, design language, prototyping, evaluation, and project presentation.

HCDN 452. Professional Practices. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: HCDN 353. An overview of professional industry practices, concepts, self-marketing strategies, educational and career options in product innovation and venture creation is presented. Preparing written materials, documenting client work and building a professional portfolio for presentation to potential employers are stressed.

HCDN 491. Special Topics in Human-centered Design. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of six credits. Study of current and emerging topics in the field of human-centered design. Topics may vary from semester to semester.

HCDN 492. Independent Study in Human-centered Design. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Students pursuing a da Vinci Center certificate may repeat for a maximum total of 3 credits. Enrollment restricted to students with junior standing and permission of adviser and da Vinci Center director prior to course registration. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

HCDN 493. Internship in Human-centered Design. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of 3 credits. Enrollment restricted to students who have permission of the certificate director. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

Innovation in Product Design and Development (INNO)**INNO 200. Introduction to Innovation and Venture Creation. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. A speaker series focused on the discussion of pertinent topics related to product innovation and venture creation. Students will be exposed to numerous topics through guest speakers supplemented by readings and class discussion. Topics include conceptualization, patents, capitalization, venture formation, commercialization, market assessment, project management and product life cycle management.

INNO 210. The Innovation Intersection: Industry and Entrepreneurship. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course will explore the intersection of industries of innovation and entrepreneurship in the social world we live in. This course will operate as part speaker series, part podcast and part group dialog. Topics include, but are not limited to, innovation in education, systemic exclusion and discrimination, ecosystem building, innovation in health care, equity, access, and funding.

INNO 221. Introduction to Arts and Design Principles. 3 Hours.

Semester course; 1 lecture and 2 studio hours. 3 credits. Restricted to non-arts students enrolled in the Certificate in Product Innovation program. Introduces arts and design principles to students from non-arts disciplines.

INNO 223. Introduction to Business Principles. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to non-business majors in the Certificate in Product Innovation program. Introduces business fundamentals to students from non-business disciplines. Particular focus will be concepts and issues in contemporary business.

INNO 225. Introduction to Engineering and Technology Principles. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to non-engineering majors in Certificate in Product Innovation program. Introduces engineering and technology fundamentals to students from non-engineering disciplines. Particular focus is the engineering problem-solving process as applied to open-ended problems. Students will be introduced to the different types of engineering, examine engineering and technology issues and apply the engineering problem-solving process.

INNO 351. Creativity for Innovation and Entrepreneurship. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of creativity in innovation and entrepreneurship. A multidisciplinary orientation and approach are emphasized.

INNO 352. Making Innovation Happen. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of innovation in today's society. A multidisciplinary orientation and approach are emphasized.

INNO 353. Making Entrepreneurship Happen. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of entrepreneurship in today's society. A multidisciplinary orientation and approach are emphasized.

INNO 450. Realizing Innovation and Entrepreneurship. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Students will learn how innovation and entrepreneurship are manifested in today's society. A multidisciplinary orientation and approach are emphasized.

INNO 460. Product Innovation: da Vinci Project. 3 Hours.

Semester course; 3 credits. Prerequisite: permission of instructor. Students from the School of the Arts, School of Engineering and School of Business work together on a semester-long product innovation project with a corporate sponsor under faculty supervision. Topics and activities may include project management, team building, concept generation and testing, market analysis, visualization, and prototyping.

INNO 491. Special Topics in Product Innovation. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of six credits. Enrollment is restricted to students with permission of adviser and da Vinci Center director. Study of current and emerging topics in the field of product innovation. Topics may vary from semester to semester.

INNO 492. Independent Study in Product Innovation. 1-3 Hours.

Semester course; 1-3 independent study hours. 1-3 credits. May be repeated for a maximum total of six credits by students pursuing a da Vinci Center certificate. Enrollment restricted to students with junior standing and permission of adviser and da Vinci Center director. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

Venture Creation (VNTR)**VNTR 300. Venture Creation Skills. 3 Hours.**

Semester course; 3 lecture hour. 3 credits. Students are introduced to and apply various skills important for real venture creation. A multidisciplinary orientation and approach are emphasized throughout the course.

VNTR 460. Venture Creation Project. 3 Hours.

Semester course; 3 lecture hour. 3 credits. Students will work in cross-disciplinary teams on a semester-long venture creation project. Topics and activities may include business model generation, customer discovery, customer validation, financial analysis and agile development.

VNTR 491. Special Topics in Venture Creation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. Enrollment restricted to students with permission of adviser and da Vinci Center director prior to course registration. Study of current and emerging topics in the field of venture creation. Topics may vary from semester to semester.

VNTR 492. Independent Study in Venture Creation. 1-3 Hours.

Semester course; 1-3 hours. 1-3 credits. May be repeated for a maximum total of six credits by students pursuing a da Vinci Center certificate. Enrollment restricted to students with junior standing and permission of adviser and da Vinci Center director. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

Academic Affairs

Community Studies (CMST)

CMST 210. Health Careers Exploration. 1-3 Hours.

Semester course; variable hours. 1-3 credits. Open only to high school students enrolled in programs partnering with VCU's Health Sciences Academy. High school students will learn college-success skills, how to make informed decisions about the health careers they wish to pursue and plan college-level courses and extracurricular activities to achieve their career goals. Material is presented through lectures from health care workers in various specialties, hands-on activities and exposure to college mentors.

CMST 300. The Foundations of Community Engagement. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Course content includes theories of citizenship, social movements, civic leadership, social justice, civil discourse, service and social capital. The survey course is foundational for subsequent seminars.

CMST 301. Neighborhood Research Seminar. 1 Hour.

Semester course; 1 credit. Prerequisite: CMST 300. Enrollment restricted to VCU ASPIRE students. Community engagement knowledge and skills are applied to studying the character, history and social issues that impact Richmond neighborhoods through group and individual projects.

CMST 310. Orientation to Service-learning. 1.5 Hour.

Seven-week course; content delivered online. 1.5 credits. Prerequisite: permission of instructor. Interactive, online orientation training designed to introduce students to the historical and theoretical foundations of service-learning. Students will also become familiar with indicators of high-quality community engagement practices. Course content is available through Blackboard, and the class will not meet face-to-face. Students are expected to complete assignments and activities for course modules by the due dates specified on Blackboard.

CMST 391. Topics in Community Studies. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of six credits with different topics. Open only to students enrolled in the ASPIRE living-learning program. An in-depth study of a selected topic in community studies. See the Schedule of Classes for specific topics to be offered each semester.

CMST 400. The Community Engagement Seminar. 1 Hour.

Semester course; 1 credit. Prerequisite: CMST 301. Discipline-based knowledge and skills are applied to assessed community needs. A service-learning component of 25 hours is included.

CMST 401. The Capstone Community Engagement Seminar. 1 Hour.

Semester course; 1 credit. Prerequisite: CMST 400. Community-identified needs are addressed by discipline-specific interventions that result in documented social change. A service-learning component of 25 hours is included.

CMST 410. Service-learning Teaching Assistant Supervision. 1.5 Hour.

Semester course; 2.5 laboratory hours. 1.5 credits. Enrollment requires permission of instructor. Corequisite: CMST 310. Provides undergraduate students with support and instruction during their first semester of service as teaching assistants to VCU service-learning courses. Requirements include a minimum of five hours per week of teaching assistance activities within a designated service-learning course, attendance at monthly group supervision meetings and participation in service-learning group activities. Supervision meetings are designed to help students build important community leadership skills such as team facilitation, ethical problem-solving and diversity awareness/appreciation.

CMST 411. Advanced Service-learning Teaching Assistant Supervision. 1 Hour.

Semester course; 2 laboratory hours; 1 credit. Prerequisites: CMST 310 and CMST 410. This course emphasizes effective techniques and strategies for advanced service-learning teaching assistants to increase their impact on student development and community outreach in service-learning courses. Students serve as peer mentors and facilitators for SLTAs in their first semester of service in addition to providing invaluable technical support to their instructors. The course will provide advanced SLTAs with individualized leadership assessments designed to enhance their leadership skills and emphasize the role of student leaders in successful service-learning courses.

CMST 491. Special Topics in Community Studies. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. Prerequisite: permission of instructor. An in-depth study of a selected topic related to community studies. See the Schedule of Classes for specific topics to be offered each semester. If several topics of different content are offered, students may elect to take more than one.

CMST 492. Independent Study in Community Studies. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. Prerequisite: permission of instructor. Intensive study or research under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

CMST 493. The Community Engagement Internship. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. May be repeated a maximum of two times with program approval. Prerequisite: CMST 300. Civic leadership and responsibility are emphasized in workplace internships established with community partners. A service-learning component of 45 hours per credit hour is included.

Cooperative Education (COOP)

COOP 298. Cooperative Education Experience. 0 Hours.

Semester course; the student works a maximum of 20 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

COOP 398. Cooperative Education Experience. 0 Hours.

Semester course; the student works a maximum of 40 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

Global Education (GLED)

GLED 101. Introduction to VCU Globe. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to students in the VCU Globe program. An introduction to the conceptual foundations of global education: culture, global citizenship and competency, globalization, and intercultural communication. Students will be introduced to the academic, service and professional expectations of the VCU Globe program. This seminar will prepare students for the campus and community outreach activities that form the core of VCU Globe's curriculum.

GLED 201. Global Education Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: GLED 101. Enrollment is restricted to students in the VCU Globe program. An introduction to the central concepts of global engagement, including defining culture in the contemporary world, intercultural communication styles and skills, and sustainable collaborations. Students will practice intercultural communication skills through campus outreach activities. The course includes 10 hours of community service activities.

GLED 202. Global Engagement Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: GLED 201. Enrollment is restricted to students in the VCU Globe program. A seminar covering core concepts in global education including globalization, sustainable development and the interconnectedness between local and global issues. Students will continue to practice intercultural communication skills through campus outreach activities. The course includes 10 hours of community service activities.

GLED 301. Planning for Global Leadership Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: GLED 202. Enrollment is restricted to students in the VCU Globe program. An introduction to the core theories and applications of global leadership, including global trends in community leadership, citizen-leadership and governmental and nongovernmental organizations. Students will practice leadership skills through community outreach activities. The course includes 10 hours of community service activities.

GLED 302. Preparing for Global Leadership Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: GLED 301. Enrollment is restricted to students in the VCU Globe program. An exploration into global issues including the causes and impact of migration as well as the role of local community groups to address global needs. Working in teams, students will refine and present proposals for applied global community-service projects to multiple audiences. Students will continue to practice leadership skills through community outreach activities. The course requires 10 hours of service activities.

GLED 391. Topics in Global Education. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits, with a limit of six credits in a single semester. Open only to students enrolled in the Global Education Living-Learning Community. An in-depth study of a selected topic in global education. See the Schedule of Classes for specific topics to be offered each semester.

GLED 401. VCU Globe Senior Capstone. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: GLED 302. Enrollment is restricted to students in the VCU Globe program. A seminar focusing on professional self-assessment, career and graduate school preparation and articulating links between global education and their professional plans. Students will integrate their learning into a comprehensive e-portfolio to showcase their signature work in a real-world context.

GLED 493. Global Leadership Practicum. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits, with a limit of 3 credits in a single semester. Prerequisites: GLED 302 and permission of instructor. Open only to seniors enrolled in the VCU Globe program. Working in teams, students will implement selected proposals. Includes 30 hours of service work per credit.

Honors (HONR)

HONR 150. Flourishing. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Restricted to freshmen in The Honors College. Transitioning from high school to college is a major developmental task. The challenges include independence from adult supervision, new friendships, exposure to a unique culture of academic pressure, relative freedom with access to leisure time activities that include both positive and negative elements. Anxiety/depression, problems with substance use and mental illness often make their presence known in this period. It can be a time of high stress and tension but also a time for unprecedented opportunity to discover strength and resilience that sets students on a positive trajectory on the stage of life. Both professors and students have discovered that self-doubt, tension and stress not only impede knowledge acquisition but also the capacity to flourish, i.e. to actualize one's innate capacity for resilience and growth. This course examines the state of college student mental health and wellness on a personal and systems level. It provides an opportunity for students to re-evaluate their beliefs, values and assumptions, and to do so in the context of learning about the science behind health and wellness. Key findings from the fields of positive psychology and the study of mental illness will inform students' understanding of the biopsychosocial underpinnings of well-being.

HONR 160. Introduction to Community Engagement. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to juniors and seniors in The Honors College. Contemporary communities are diverse and interconnected. To impact positive social changes, leaders in these communities must understand critical theories of community engagement. This course surveys critical theories and models of community engagement, including but not limited to theories of citizenship, social movements, civic leadership, social justice, civil discourse and social capital. Students will use an interdisciplinary lens to analyze principles and practices of community engagement.

HONR 170. Humans of RVA and VCU. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment restricted to students in the Honors College. Students will study the nature of community, especially the Richmond community, as well as community engagement and their role in it. They will study the differences among the terms community engagement, community service and service learning, as well as their relationship to social justice and social change. In the style of the website Humans of New York, students will work in cohorts to interview Richmond residents and post stories and photos to social media, with an eye toward better understanding the many aspects of community.

HONR 171. Investigative Inquiry in RVA. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: HONR 170. Enrollment is restricted to students in the Honors College. Utilizing "City as Text," this experiential learning course provides students with an opportunity to work in diverse cohorts to experience activities and events in the Richmond community.

HONR 190. Freshman Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Restricted to freshmen in The Honors College. This course develops a learning paradigm for students appropriate to university education. Students are expected to gain a willingness to take intellectual risks, to engage in their own learning actively and to take responsibility for their own education. A thorough orientation to the library and other university resources is included. The students will hone critical-thinking skills while examining selected topics from a perspective that emphasizes critical interpretation rather than mastery of information. Students will engage in collaborative projects on specified topics. Attendance at certain Honors College events is required.

HONR 198. Freshman Honors. 1-4 Hours.

Semester course; 3 lecture hours. Variable credit. Maximum total of 8 credits. May be repeated once under different topic. Prerequisite: permission of the dean of The Honors College. An interdisciplinary course that will provide an intensive study of selected topics.

HONR 200. Rhetoric. 3 Hours.

Semester course; 3 lecture hours. 3 credits. In-depth study of principles of rhetoric and argumentation in both written and oral formats. Emphasis is on research-based expository writing and debate, with skills development in technological applications for information retrieval. Students may not receive credit for both HONR 200 and UNIV 200.

HONR 250. Expository Writing. 3 Hours.

Semester course; 3 lecture hours. 3 credits. In-depth study of principles of expository writing focusing on purpose and audience. Particular emphasis on critically engaging with texts and writing about original ideas informed by the thinking of others. Develops a number of writing strategies and skills including narration, description and figuration as well as the art of persuasion.

HONR 298. Sophomore Honors. 1-4 Hours.

Semester course; 3 lecture hours. Variable credit. Maximum total of 8 credits. May be repeated once under different topic. Prerequisite: permission of the dean of The Honors College. Appropriate prerequisite or corequisites may be demanded. An interdisciplinary course that will provide an intensive study of selected topics.

HONR 300. Qatar Honors Experiential Learning Project. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior or senior standing and approval of Honors College dean. Restricted to honors students. Experiential learning is a project-based and student-led experience utilizing hands-on learning, academic research and personal reflection to increase knowledge, develop skills, clarify values and make worthwhile contributions to communities, organizations or groups. This course provides honors students with opportunities to collaborate with local, regional and/or international communities and organizations to engage in meaningful projects and initiatives that enhance academic enrichment, foster personal growth and practice social responsibility.

HONR 398. Honors Topics. 1-4 Hours.

Semester course; 3 lecture hours. Variable credit. May be repeated with different topics. Prerequisite: permission of the dean of The Honors College. Appropriate prerequisite or corequisites may be demanded. An in-depth study of selected topics. May be cross listed with departmental courses. See the Schedule of Classes for specific topics to be offered each semester.

HONR 399. Honors Module. 1.5 Hour.

Five-week course; 3 lecture hours. 1.5 credits per module. Prerequisite: permission of the dean of The Honors College. Intensive studies of topics from a wide spectrum of disciplines are undertaken. Each module is a self-contained unit. See the Schedule of Classes for specific topics to be offered each semester.

HONR 492. Honors Independent Study. 0.5-4 Hours.

Semester course; variable hours. Variable credits. Maximum of 4 credits per semester. Maximum total of 9 credits over all semesters. Prerequisites: junior or senior standing, and approval of Honors College dean and instructor/tutor. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

HONR 493. Honors College Internship. 1-3 Hours.

Semester course; 1-3 field experience hours. 1-3 credits (50 hours per credit). May be taken for a maximum of 3 credits per semester with a maximum of 6 credits total. Enrollment restricted to junior or senior students in the Honors College with approval of internship coordinator. Designed to provide students with real-world experience in the public, private and not-for-profit sectors. Graded as pass/fail.

HONR 494. Honors College Senior Capstone. 4 Hours.

Semester course; 4 independent study hours. 4 credits. Prerequisites: HONR 170; HONR 200 or UNIV 200; and HONR 250. Enrollment is restricted to seniors in the Honors College with a 3.2 grade point average in honors courses. Each student will participate, either individually or as part of a cohort, in preparing a project proposal approved by the course coordinator. This course will entail the planning and execution of a scholarly project where understanding of research techniques, effective oral and written communication and knowledge of relevant literature and theories are clearly demonstrated.

HONR 495. Honors College Senior Capstone: Proposal Writing. 2 Hours.

Semester course; 2 independent study hours. 2 credits. Prerequisites: HONR 170; HONR 200 or UNIV 200; and HONR 250. Enrollment is restricted to seniors in the Honors College with a cumulative 3.2 GPA in honors courses. This course is a part one of a two-semester sequence where each student will participate, either individually or as a part of a cohort, in preparing a project proposal approved by the course coordinator.

HONR 496. Honors College Senior Capstone: Practicum. 2 Hours.

Semester course; 2 independent study hours. 2 credits. Prerequisite: HONR 495. Enrollment is restricted to seniors in the Honors College with a cumulative 3.2 GPA in honors courses. This course is part two of a two-semester sequence where each student will participate, either individually or as a part of a cohort, in implementing a project proposal approved by the course coordinator.

LEAD (LDRS)**LDRS 200. Profiles in Leadership. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to students in the Emerging Leaders Program or an approved program-in-residence. This seminar will introduce students to leadership by exploring a variety of historical and contemporary leaders and discussing the impact of their leadership on the world. Students will also discuss the ways in which their own leadership development can contribute to their success both in the classroom and in their communities.

LDRS 201. Leadership Identity. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Course restricted to students enrolled in VCU LEAD. This seminar will expose students to foundational principles of the leadership phenomenon, explore the role of the leader in the leadership process and promote self-understanding and leadership efficacy. Students will learn the ways in which leadership identity is developed and will discover and reflect upon their own leadership identity.

LDRS 202. Leadership Context. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: LDRS 201. This seminar will provide an overview of the different contexts in which leadership occurs. Students will examine leadership pathways that are available through the VCU LEAD program and choose a pathway for in-depth exploration.

LDRS 301. Leadership Engagement. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: LDRS 202 and UNIV 270. This seminar will focus intensely on the student's experience in the leadership practicum as both a leader and a follower. Students will analyze the ways in which leadership theory and principles learned in the classroom applied to their experience and how their preparation and self-efficacy as a leader contributed to their success.

LDRS 302. Culminating Leadership Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: LDRS 301. This culminating seminar integrates all aspects of the VCU LEAD program. Students will examine the different contexts in which they experienced leadership from the perspective of both leader and follower. The student will clearly illustrate their expertise, capability and self-efficacy as a leader through a folio of their experience.

LDRS 491. Special Topics in Leadership. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. Enrollment requires admission to VCU LEAD and permission of instructor. An in-depth study of a selected topic related to leadership. See the Schedule of Classes for specific topics to be offered each semester. If several topics of different content are offered, students may elect to take more than one.

LDRS 492. Independent Study in Leadership. 1-3 Hours.

Semester course; 1-3 variable hours. 1-3 credits. Enrollment requires admission to VCU LEAD and permission of instructor. Intensive study supervision of a faculty member in an area not covered in-depth or contained in other VCU LEAD (LDRS) courses and/or independent investigation and research of leadership problems through readings, data collection and analysis. Written interim and final reports required.

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