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2023-24

Professional Bulletin



Virginia Commonwealth University is an equal opportunity/affirmative action university providing access to education and employment without regard to race, color, religion, national or ethnic origin, age, sex (including pregnancy), political affiliation, veteran status, genetic information, sexual orientation, gender identity, gender expression or disability.

Archived: December 2023



VCU

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PROFESSIONAL BULLETIN

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

Visit our [FAQ page](#) for additional information.

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 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 \$363 million in externally funded research awards for the 2021 fiscal year, VCU is one of only 67 universities nationwide classified by the Carnegie Foundation as an "R1 Doctoral University – Highest Research Activity," the foundation's highest ranking, as well as its prestigious "Community Engagement" status. 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 28,000 students in more than 200 degree and certificate programs in the arts, sciences and humanities. Twenty-nine 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 2,100 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 serves diverse populations through impactful research and creativity, rigorous study, and extensive community engagement and is 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. VCU also may offer credentials such as certificates and diplomas at approved degree levels. 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 Associate 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 domicile 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 domicile 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 domicile 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 domicile 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 domicile 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 domicile 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 Student Privacy Policy 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, Box 842520, Richmond, VA 23284-2520 or in person at Harris Hall, 1015 Floyd Ave, 1st Floor, Room 1004.

All official mailings are sent to the permanent address on file.

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 \$10 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 to the Office of Records and Registration in Harris Hall, 1015 Floyd Ave., Room 1004; or requests may be submitted by mail to the Office of Records and Registration, Box 842520, Richmond, VA 23284-2520. Students and alumni may request an official transcript and pay by credit card by logging in to eServices or the National Student Clearinghouse. Additional fees are charged for expedited delivery services and for those ordered through the National Student Clearinghouse.

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.

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. Degree Works is a self-service tool for students and advisers, and it is the official means used to confirm that students have completed requirements for graduation. Note: Degree Works may not be available to first-professional students or applicable to those programs.

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	(-)
PL	Placement exam/waiver	(-)
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 (<http://bulletin.vcu.edu/undergraduate/undergraduate-study/tuition-fees-expenses/>) 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. 14) 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 (<http://bulletin.vcu.edu/undergraduate/undergraduate-study/tuition-fees-expenses/>) section of this bulletin.

Pass/fail grade policy for undergraduate students

The pass/fail grade policy allows undergraduate students to choose not to have a grade assigned in a limited number of courses for which they receive VCU credit. This available choice allows students to explore elective and general education courses outside their major without the pressure associated with maintaining a particular GPA. It also facilitates timely degree completion and may reduce the need to repeat a course in order to maintain academic standing. It is the goal of the pass/fail policy to support equitable and accessible academic experiences for its 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 15 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, minor or certificate program

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. Departments require that all courses satisfying major requirements be completed with a traditional letter grade; and in these instances, students who change their majors may need to repeat a course for which they have previously earned a grade of PP or PS.

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. 8).

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 (<http://bulletin.vcu.edu/academic-regs/ugrad/arac/>).

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. 8) 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. 14) (for graduate and professional students) and medical leave of absence (<http://bulletin.vcu.edu/academic-regs/ugrad/medical-leave-absence/>) (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.

FIRST-PROFESSIONAL STUDY

Virginia Commonwealth University currently offers first-professional programs leading to the Doctor of Dental Surgery, Doctor of Medicine and Doctor of Pharmacy degrees.

Continuance in professional programs

Warning, probation and suspension are defined by the program of study. Students may be required to repeat courses previously passed at the recommendation of the program. Consult the program adviser for further details.

Professional programs admissions

General admission requirements and procedures

Virginia Commonwealth University is committed to inclusive admissions practices and does not consider race or legacy status as a factor when determining admission to the university.

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, military status (including veteran status), genetic information (including family medical history), sexual orientation, gender identity, gender expression or disability.

Admission requirements

Admission requirements, entrance examinations and application materials for first-professional programs may be obtained by contacting the appropriate admissions office. Other detailed information including financial aid opportunities, procedures for international students, regulations and procedures, academic, curricula, and degree requirements are included in the section describing each professional program.

Admission through VCU's Honors College

VCU undergraduate students who are members of The Honors College may apply to The Honors College Guaranteed Admission Program either before matriculation at VCU or early in their undergraduate studies. (The deadline for applying is set by the specific first-professional program.) Honors students in the GA Program may enter the first-professional program to which they have applied, provided they satisfy all of the requirements of the GA Program.

To be accepted in GA Program, a student must submit a completed application form with at least two letters of recommendation and be accepted by the university, by The Honors College and by the admissions committee of the first-professional program the student wishes to enter. The admissions committee may require an interview. Notification of admission to the GA Program is made by The Honors College. For additional information, refer to the Honors College section of the Undergraduate Bulletin.

All of VCU's first-professional programs participate in The Honors College GA Program.

International students

International students should refer to the appropriate professional program's section of the Bulletin for information regarding international student admission.

Professional programs financial aid

Current information on financial aid programs, policies and procedures are available on the Student Financial Services website (<http://sfs.vcu.edu/>).

To obtain printed materials or additional information, call or visit the appropriate financial aid office.

College of Health Professions and the Schools of Nursing and Pharmacy

VMI Building, Room 334
1000 East Marshall Street
Box 980277
Richmond, Virginia 23298-0277
(804) 828-2702
Fax (804) 827-0060
Email: nabdul@vcu.edu

School of Dentistry

Lyons Building, Room 309
520 North 12th Street
Box 980566
Richmond, Virginia 23298-0566
(804) 828-9953
Fax (804) 828-6072
Email: kdgillia@vcu.edu

School of Medicine

McGlothlin Medical Education Center
1201 East Marshall Street
Box 980565
Richmond, Virginia 23298-0565
(804) 828-4006
Fax (804) 827-5555
Email: hking1@vcu.edu

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. Visit the eServices website (<http://www.eservices.vcu.edu/>) for additional information.

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 in a timely fashion university-related communications sent to their official VCU student email account. The Office of 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 (<http://www.ts.vcu.edu/askit/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.

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 (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 the VCU Office of Financial Aid (The full VCU SAP policy is available on the Student Financial Services website (<https://sfs.vcu.edu/financial-aid/keeping-your-aid/satisfactory-academic-progress/>).
- 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 on the Federal Student Aid website (<https://studentaid.gov/resources/#college-prep-and-pay>) and is also available in print form from the Student Financial Services website. (<http://sfs.vcu.edu/>)

Applying for financial aid

The financial aid application process for the academic year begins Oct. 1. All students are encouraged to complete and submit the FAFSA 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 on the Web (<https://studentaid.gov/>). Once the FAFSA is filed, the federal processor will send the student a Student Aid Report or electronic SAR acknowledgement and also will electronically send the information to the VCU Office of Financial Aid, if VCU was listed as a school to receive the data. If additional information is needed to complete processing of the application, the VCU Office of Financial Aid will send the student a request for additional information. Responding promptly to such requests will ensure timely processing of the application. Once the review of FAFSA data has been completed, the Office of Financial Aid will send the student a financial aid notification.

Please note that health professions students (dentistry, medicine, nursing or pharmacy) must provide both student and parental information on the FAFSA to apply and receive consideration for Title VII grants and loans from the Department of Health and Human Services.

Priority filing dates

The VCU Office of Financial Aid recommends electronically filing the FAFSA by Feb. 1. Students should complete the FAFSA using data from their completed tax returns. If necessary, they may use estimated tax return data in order to meet the VCU priority filing date but should be prepared to submit a copy of their completed tax returns and W2 forms to VCU as soon as possible. Students will receive their financial aid notification after their FAFSA application data has been verified. If students have not applied for financial aid in a timely manner, they may want to participate in the VCU Installment Payment Plan (<https://sfs.vcu.edu/billing-and-payments/installment-plan/>), administered by Student Accounting, which budgets each semester's bill over four payments.

Summer studies

Limited financial aid may be available during the summer semester. Students applying for the summer semester must file the FAFSA for the academic year preceding the summer semester. Students should review the summer financial aid policy statement (<https://sfs.vcu.edu/financial-aid/keeping-your-aid/summer-aid/>), available on the Student Financial Services website.

Students interested in financial aid for the summer semester should obtain a VCU Summer Studies Schedule of Classes (<http://www.pubapps.vcu.edu/scheduleofclasses/>) (available in March) for more details.

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) 827-7882. Students should work with a financial aid counselor to coordinate aid for their study abroad program. Information about financial aid and study abroad (<http://global.vcu.edu/abroad/students/funding/>) is available on the Global Education Office website.

Quality assurance

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, the student (and the student's parents or spouse, if applicable) agreed 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.

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.

Special circumstances

Financial aid eligibility decisions are made using federal, state and institutional regulations and policies. Students may appeal their calculated contribution if special circumstances warrant a review. Reasons for an appeal might include one of the following documented unusual circumstances:

- Loss or reduction of employment earnings
- Disability or death of parent or spouse
- Separation or divorce
- Loss or reduction of untaxed income
- Losses due to a natural disaster
- Unusually high educational program costs
- 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.

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 tuition/fee 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.

Satisfactory academic progress

To be eligible to receive financial aid at VCU, students must make satisfactory academic progress. SAP is a combination of qualitative and quantitative components. SAP is measured by:

- **GPA.** Graduate students must maintain a 3.0 cumulative GPA.
- **Completion rate.** The completion rate is measured by the number of credit hours earned divided by the number of credit hours attempted. All students must successfully complete at least 67 percent of all credit hours attempted (withdrawals, incompletes and repeated courses also are considered attempted credit hours). VCU rounds up to the whole number of 67 percent when the completion rate is 66.5 percent or above.
- **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 175 percent of the hours required to complete their degree or certificate program.

The Office of Financial Aid will perform a periodic SAP review for students who receive or apply for financial aid. The reviews are typically performed at the end of the spring semester and must be completed at least once per academic year.

Students will be alerted with warning letters, whenever possible, to provide them with notice that their financial aid may be in danger of being suspended. When students fail to meet SAP requirements, they will receive suspension letters 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.

For more detailed information about the VCU satisfactory academic progress (<http://www.finaid.vcu.edu/manage/sap/>) policy, visit the Office of Financial Aid website.

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 federal loan programs provide the most dollars. Federal loans must be repaid after the grace period and/or deferment periods have expired. Students must generally remain enrolled at least half-time (five credit hours for graduate students). Multiple repayment plans may be available for most federal loans. Selected loan programs include:

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

Borrowers in the Federal Direct Loan Program are required to complete loan counseling prior to the first disbursement if you have not previously received a Direct Loan, Federal Family Education Loan or Supplemental Loans to Students Loan. A student will also be required to complete exit counseling before they graduate, withdraw or drop below half-time status.

Visit the StudentAid.gov website (<https://studentaid.gov>) to complete entrance and exit counseling.

Grants

Contact individual academic departments for information about grant or scholarship programs.

Work-study

Work-study (<https://sfs.vcu.edu/financial-aid/types-of-aid/federal-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 off-campus locations. Hourly wages will vary depending on skills and experience. Job listings are posted on through Handshake at VCU (<https://vcu.joinhandshake.com/login/>). When interviewing for work-study positions, students should take copies of their financial aid award notifications to show prospective employers.

Veteran and reservist educational benefits

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
(804) 828-6563
Fax: (804) 828-8212
militaryserv@vcu.edu

militaryservices.vcu.edu (<https://militaryservices.vcu.edu/>)

Available programs

For details on any of these programs, please visit the Military Student Services website benefits overview (<http://www.militaryservices.vcu.edu/veterans/>).

- 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.

Professional programs tuition and student fees

Students must pay all applicable tuition, room, board and other fees when due, as described in this section. Students who fail to pay these charges on time may be assessed a late payment fee. The university reserves the right to revise or alter all tuition and fees, regulations pertaining to student fees, and 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 responsibilities

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. 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 are categorized and described (<https://accounting.vcu.edu/tuition/>) on the Student Accounting website.

The university reserves the right to revise or alter all fees, regulations pertaining to student fees and fee collection procedures at any time.

Tuition and fee schedule

Tuition and fees are categorized and described on the Student Accounting website (<https://accounting.vcu.edu/tuition/>). Questions regarding tuition and fees may be directed to the Student Accounting Department at (804) 828-2228, or by emailing stuacctg@vcu.edu. The university reserves the right to revise or alter all fees, regulations pertaining to student fees and fee collection procedures at any time.

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 is used to support social, cultural and other student activities on the Monroe Park Campus. These activities include concerts, plays, student organizations and publications. Full-time students on the Monroe Park Campus pay a flat-rate student activity fee, while part-time students on the same campus pay this fee on a per-credit basis. Students on the MCV Campus are not charged this fee.

Student Government Association fee

This fee is used to support social, cultural and other student activities on the MCV Campus. The fee is charged to all full-time and part-time MCV Campus students. Monroe Park Campus students are not charged this fee.

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/about/eligibility-and-charges/>).

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 provide for students' technological needs and to support universitywide technological initiatives.

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 around-the-clock services in James Branch Cabell Library and the new library facility, expand hours at the Tompkins-McCaw Library, strengthen digital tools and generally support operating costs for VCU Libraries.

Off-campus fees

The university fee, the student activity fee, the student government association fee (except School of Social Work) and the student health fee are not charged to students taking off-campus classes.

Capital outlay fee

This fee is charged to all full-time and part-time non-resident, on-campus students. The fee is mandated by the General Assembly to reimburse the State for debt service costs attributable to non-resident students related to the financing of buildings and equipment.

Online course fee

The online course fee is charged for undergraduate and graduate online courses. The fee covers operational and personnel support to develop and maintain online courses.

Special fee charges

Because of specialized programs, various schools and departments may charge each student additional fees to cover special materials, equipment breakage and other costs. For specific information about special fees, refer to the Student Accounting Department website or to the specific school or department section in this bulletin.

Student billing

Students must pay all applicable tuition, fees, room and board when due. 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 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.

The installment payment plan (<https://accounting.vcu.edu/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 aid to determine the net total due. 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 first installment and follow the instructions to enroll in the IPP.

There is a \$25 nonrefundable application fee payable with the first installment of each semester. Interest is not assessed on the outstanding balance; however, installments not paid by the payment due date are subject to a late payment penalty. Information about how to participate in the IPP (<https://accounting.vcu.edu/plan/>) is available on the Student Accounting website.

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, which 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 may owe a balance to the university.

Refund of tuition and fees

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 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 and discounted tuition. 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.

- Students dropping/withdrawing from courses through the first week of class will be entitled to a 100 percent refund of tuition and fees.
- Students withdrawing from courses through the second week of class may be entitled to an 80 percent refund of tuition and the university fee.
- Students withdrawing from courses through the third week of class may be entitled to a 60 percent refund of tuition and the university fee.
- Students withdrawing from courses through the fourth week of class may be entitled to a 40 percent refund of tuition and the university fee.
- Students withdrawing from courses after the fourth week of class are not entitled to receive a refund of tuition and fees.

The refund policy and deadlines of the English Language Program are different from the university's refund policy for academic courses. Details of the policy may be obtained from the English Language Program office.

A full refund for holiday intersession will be granted if the course is dropped before 4:30 p.m. on the day of the first class meeting. Partial refunds are not granted.

A full refund for a short/nonstandard 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. No refund of tuition and fees is given for withdrawals of short and nonstandard courses. Students should contact their program administrator for withdrawals from nonstandard classes that are longer than standard classes.

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 policy also is applicable if the class does not meet on two consecutive days.) Students reducing their academic course loads to less than full-time (12 credits for undergraduates and nine credits for graduates) before the end of the last day to drop a course will be entitled to a refund of tuition and applicable fees reflecting the reduced course load. Partial refunds are not granted for the summer session.

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 Federal financial aid refund policy (p. 18).

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 to three 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 refund appeals committee within three years.

Refer to the Residential Housing contract and Dining Services' terms and conditions for housing and dining services refunds.

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 Services Center, 1015 Floyd Ave. and on the Student Accounting website (<http://accounting.vcu.edu/refunds/>).

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

Outstanding charges

Students who fail to meet payments when due will be assessed late payment penalties and will be denied registration for future classes until they have paid all accrued amounts owed. Students with balances owed to the university will not be issued degrees, official transcripts of grades or graduate reports until all charges are paid in full.

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, Virginia Commonwealth University, Box 843036, Richmond, VA 23284-3036.

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.

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

A student who pays a past due balance with a dishonored check or credit/debit card may be subject to having their current and/or future registration cancelled. A charge of \$50 is levied for all dishonored payments.

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**.

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 and John M McHugh Tuition Fairness Act of 2021

The following individuals shall be charged the net in-state rate, or otherwise considered a resident, for tuition 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 the

commonwealth of Virginia while attending a school located in Virginia (regardless of their formal state of residence)

- Anyone using transferred Post-9/11 GI Bill benefits who lives in the state where the IHL is located, and the transferor is a member of the uniformed service serving on active duty
- A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9) who lives in the commonwealth of Virginia while attending a school located in Virginia (regardless of their formal state of residence)
- A spouse or child using benefits under Survivors' and Dependents' Education Assistance (Chapter 35) living in the commonwealth of Virginia while attending a school located in Virginia (regardless of their formal state of residence)
- An individual using educational assistance under Chapter 31, Veteran Readiness and Employment who lives in the commonwealth of Virginia while attending a school located in Virginia (regardless of their formal state of residence) effective for courses, semesters or terms beginning after March 1, 2019
- Anyone described above who remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters or terms) at the same institution.

Therefore, the described person must be enrolled in the institution and use educational benefits under chapters 30, 31, 33 or 35 of Title 38, United States Code.

*G.I. Bill is a registered trademark of the U.S Department of Veterans Affairs. More information about education benefits offered by VA is available at the official U.S. government website (<http://www.benefits.va.gov/gibill/>).

Tuition determination and student classification

Tuition is determined by the number of credit hours a student is taking, the student's residency classification, course of study and classification level.

In-state residency

Eligibility for in-state tuition benefits is determined by the Code of Virginia. Refer to the Determination of student classification for in-state tuition purposes (<http://bulletin.vcu.edu/graduate/about/determination-student-classification-instate-tuition/>) in the About VCU section of this bulletin for the complete code.

All applicants to VCU who want to be classified as Virginia residents must complete the application for Virginia in-state tuition rates included in the application for admission. The domicile determination of the applicant will be 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 domicile 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 domicile 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 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. 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 advisement 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 also are notified by mail. The denial letter informs the student of procedures for appeal of this decision, to include filing an appeal with the University Domicile 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.

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 three locations – the Lyons Dental Building, the Perkinson Building and Dental Building I – and contain clinical facilities, research facilities, classrooms, student laboratories and departmental offices.

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.

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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Dean

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Senior associate dean, Clinical Education

B. Ellen Byrne, D.D.S., Ph.D.
Senior associate dean, Academic Affairs

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Associate dean, Development and Alumni Relations

Kim T. Isringhausen, M.P.H.
Associate dean, Risk, Compliance and Human Resources

Oonagh Loughran, Ph.D.
Associate dean, Graduate Studies

Iain M. Morgan, Ph.D.
Associate dean, Research

Mary T. Pettiette, D.D.S.
Associate dean, Admissions

Carlos S. Smith, D.D.S., M. Div.

Associate dean, Inclusive Excellence, Ethics and Community Engagement

Vacant
Associate dean, Student Services

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:

Educating tomorrow's oral health leaders in a community of service and inclusion by utilizing emerging technologies and innovative research to provide comprehensive oral health care for all

Philips Institute for Oral Health Research

Iain M. Morgan, Ph.D.
Director

The mission of the Philips Institute for Oral Health Research is to serve the university and the commonwealth of Virginia as a center of educational and research excellence focused on infectious, neoplastic and genetic diseases of the oral cavity, head and neck.

Dentistry, Doctor of Dental Surgery (D.D.S.)

The Doctor of Dental Surgery is a four-year program in general dentistry leading to the D.D.S. degree and emphasizing study in three broad areas: basic sciences, clinical sciences and social sciences. The academic year begins in July and extends through May.

Student learning outcomes

As a result of successfully completing the pre-doctoral dental curriculum the new dentist will be competent in the following areas:

A. Diagnosis and treatment planning

1. Diagnosis

Assess and diagnose diseases and abnormalities of the oral cavity and head/neck region in pediatric and adult patients. Obtain, assess and properly utilize information relative to systemic health of patients, initiating consultations and referrals to other health care professionals as appropriate.

2. Treatment planning

Develop a comprehensive evidence-based treatment and/or referral plan(s), based on etiologic factors, current oral disease risk analyses, standards-of-care strategies and biomedical and clinical scientific knowledge. Develop evidence-based treatment plan options to present to patient/parent involving them in the health care decision-making process and obtain informed consent.

B. Oral health management

3. Emergency care

Manage dental emergencies.

4. Anxiety and pain management

Utilize pharmacological therapies and behavioral techniques to prevent or manage pain and anxiety.

5. Oral health education

Educate patients, parents and/or caregivers with individualized instructions for improving and maintaining good oral health, monitoring and re-evaluating as necessary.

6. Oral function

Provide treatment and/or referrals as appropriate with the goal of achieving physiologic form, oral function and health to include the following areas:

- a. Prevention and management of dental caries
- b. Restoration of teeth
- c. Replacement of teeth including fixed, removable and dental implant prosthodontic therapies
- d. Prevention and management of periodontal diseases
- e. Prevention and management of pulpal and periradicular diseases
- f. Prevention and management of oral mucosal and osseous disorders
- g. Management of uncomplicated oral surgical procedures
- h. Recognition and management of malocclusion and space maintenance needs

7. Outcomes

Self-assess competency and evaluate the outcomes of patient-centered dental health care.

8. Community

Engage in community-based disease prevention and health promotion activities.

C. Practice and profession

9. Ethics

Apply concepts of professional ethics, health care principles and adhere to the ADA Principles of Ethics and Code of Professional Conduct.

10. Communication and behavioral principles

Utilize appropriate interpersonal skills, communication skills, psychosocial principles and behavioral principles in caring for a diverse population of patients and collaborating with other members of the health care team.

11. Critical thinking

Integrate and synthesize information to advance knowledge and skills through critical evaluation of biomedical literature and the application of new science to patient care.

12. Risk principles

Apply principles of risk management, quality improvement, infection control and radiation safety to patient care.

13. Business and legal/regulatory matters

Apply the business principles and programs used in the administration of a dental practice while complying with all regulations, policies and protocols that relate to health, safety and the law.

Admission requirements

Mary T. Pettiette, D.D.S.

Associate dean, Admissions
(804) 628-4400

A minimum pre-dental study of 90 semester credit hours (or 145 quarter credit hours) at a U.S.- or Canadian-accredited institution is required to matriculate to the School of Dentistry. A maximum of 60 semester credit hours from an accredited community college may be applied to the 90 credit hour credential. Based on the competitiveness and number of applicants, it is common for the school to seek candidates on track to receive a qualifying bachelor's degree from an accredited four-year degree-granting institution prior to the date of matriculation. Required courses are general biology, biochemistry, general chemistry, organic chemistry, physics, math and English. Laboratory experiences are required for those courses where applicable. Biology courses should emphasize zoology rather than botany. Courses in general microbiology or bacteriology, animal physiology, human anatomy, immunology, histology, genetics, embryology, the behavioral sciences and courses involving psychomotor skills are strongly recommended. Academic credits presented by an applicant must be acceptable for credit toward a degree at the institution in which the courses are taken. Individuals interested in pursuing a career in dentistry should schedule an appointment with the Office of Admissions for individual guidance.

In order to successfully complete the dental curriculum at VCU, students must meet non-academic criteria for motor, sensory and observation, communication, cognitive, and behavioral abilities that are listed in the document Technical Standards for Dental Education Programs for VCU School of Dentistry. Accordingly, applicants may be required to prove their proficiency in American English via standardized tests and interviews. An applicant may consider the option of postponing matriculation until such time as he/she can meet these requirements.

Participation in the Dental Admission Test of the American Dental Association is required. It is recommended that this test be taken the year before the intended matriculation year. If a candidate decides to take the examination more than one time, the best set of scores is used as the official result, taken within three years from the time of application.

Information about the Dental Admission Test can be obtained from: a) the applicant's pre-health advising office of the undergraduate institution, b) ADEA.org GoDental (<http://www.adea.org/GoDental/>) or c) the American Dental Association, Department of Testing (<http://www.ada.org/en/education-careers/dental-admission-test/>).

Selection factors

VCU is a state-supported, public university and gives admission preference to Virginia state residents. All applicants are evaluated by uniform criteria without regard to age, race, color, national origin, gender, religion, sexual orientation, veteran's status, political affiliation or disability. Students are accepted by the admissions committee on the basis of excellence of pre-dental education, DAT scores, recommendations, experiences in dentistry and results of personal interviews with members of the committee. The interview process is standardized and designed to determine motivation, knowledge of and interest in the dental profession and to afford the applicant an opportunity to provide additional information pertaining to his/her application. Selection occurs on a rolling admissions basis, and once the class is complete an alternate list is created. Members of minority groups underrepresented in dentistry are especially encouraged to apply. Each year a certain number of students who are not accepted into the freshman class are invited to take selected courses with this class. Their performance in these courses plays a vital role in their being considered for the following year's admissions process.

Admission with advanced standing

The VCU School of Dentistry International Dentist Program (<http://www.dentistry.vcu.edu/programs/internationaldentists/>) offers internationally trained dentists an opportunity to enter the D.D.S. program in the second year. The program is open to all foreign-trained dentists. More information can be found on the school's website at the hyperlink above.

Application procedures

The School of Dentistry participates in the American Association of Dental Schools Application Service. All applicants are required to submit credentials through this service. Reapplicants must also reapply through the application service.

Application to the School of Dentistry can be made through AADSAS on or after June 1. The priority deadline is Sept. 1 of the year preceding intended matriculation. The final deadline to submit applications to VCU through AADSAS (http://www.adea.org/GoDental/The_application_to_dental_school_ADEA_AADSAS.aspx) is Jan. 1.

AADSAS compiles academic records and other pertinent information and forwards these with the application to the School of Dentistry. Qualified applicants are then requested to submit additional information, such as the VCU supplemental application. The VCU application fee is \$80, in addition to the AADSAS application fee.

Applicants will be notified of decisions according to guidelines established by the American Dental Education Association. The first acceptances are sent out on Dec. 1; subsequent acceptances are sent out in early spring. In order to reserve a position in the class, a nonrefundable tuition deposit of \$800 is required.

This offer of acceptance is contingent upon successful completion prior to admission of a qualifying bachelor's degree, if applicable, including completion of all courses in which applicants are enrolled or plan to complete to earn the degree, as well as an approved criminal

background check. All required courses must be completed (with a minimum grade of C-). Applicants must submit a final, official transcript indicating the degree, if applicable, and the date it was conferred. The act of matriculation also implies a willingness on the part of the student to comply with university rules and regulations, to take an interest in maintaining the ideals of the institution and to conduct himself/herself in a manner befitting a member of the dental profession.

For more information please visit the School of Dentistry website (<http://www.dentistry.vcu.edu>). Applicants may also contact ADEA AADSAS directly at (617) 612-2045 or via email at aadsasinfo@aadsasweb.org.

Curriculum

The curriculum in the dental school is organized into a competency-based, four-year program leading to the Doctor of Dental Surgery (D.D.S.) degree. The academic year begins in July and extends through June. The program emphasizes study in three broad areas: biomedical sciences, clinical sciences and behavioral sciences.

The biomedical sciences include the in-depth study of human anatomy, genetics, immunology, material science, microbiology, pathology, pharmacology and physiology.

The clinical sciences prepare the student for the actual practice of dentistry and provide exposure to the various specialties in dentistry.

The behavioral sciences cover such topics as dental health needs, recognition of health care disparities, patient-centered care, the system of health care delivery, practice management, professional ethics and behavioral factors.

Laboratory and clinical experiences are offered throughout the four years to develop the skills and judgment vital to the practice of general dentistry.

In general, courses offered as part of the curriculum in dentistry are not available to other students in the university. Exceptions may be granted by the dean of the School of Dentistry to students enrolled in graduate degree programs upon written request of the department chair in which the student is seeking a degree.

Curriculum requirements

Course	Title	Hours
DEBS 501	Dental Gross Anatomy	6.5
DEBS 502	Dental Neuroanatomy	1
DEBS 503	Infection and Immunology	3.5
DEBS 511	Microscopic Anatomy	5
DEBS 512	Physiology and Pathophysiology	5
DEBS 513	Dental General Pathology	6
DEBS 601	Dental Pharmacology and Pain Control I	4
DEBS 701	Dental Pharmacology and Pain Control II	2
DENS 503	Introduction to Behavioral Science in Dentistry	1.5
DENS 508	Dental Materials I	1
DENS 513	Foundations of Effective Interpersonal Skills During Patient Interactions I	2
DENS 515	Clinical Skills I	1
DENS 516	Clinical Skills II	3.5
DENS 522	Preclinical Restorative Lecture I	4

DENS 523	Preclinical Restorative Lab I	4.5	ORPT 623	Temporomandibular Disorders and Orofacial Pain	1
DENS 524	Evidence-based Dentistry and Critical Thinking I	1	ORPT 732	Clinical Oral Pathology and Oral Medicine	1
DENS 532	Preclinical Restorative Lecture II	1.5	ORPT 737	D3 Radiology Rotation	1
DENS 533	Preclinical Restorative Lab II	1.5	ORSG 622	Introduction to Oral Surgery	1
DENS 603	Foundations of Effective Interpersonal Skills During Patient Interactions II	2	ORSG 731	Medical Management of Emergency Care Dental Patients	2
DENS 607	D2 Clinical Dentistry I	1	ORSG 733	Principles of Oral and Maxillofacial Surgery	1.5
DENS 608	Dental Materials II	1	ORSG 739	Clinical Oral Surgery III	2.5
DENS 611	Introduction to Professionalism, Ethics and Ethical Decision-making	1	ORSG 749	Clinical Oral Surgery IV	2
DENS 617	D2 Clinical Dentistry II	2	ORTH 623	Orthodontics Lecture	2
DENS 619	Evidence-based Dentistry and Critical Thinking II	1	ORTH 733	Orthodontic Therapy	1
DENS 621	Dental Occlusion	1	ORTH 739	Clinical Orthodontics III	1
DENS 622	Dental Occlusion Lab	1.5	PEDD 622	Introduction to Pediatric Dentistry	2
DENS 627	D2 Clinical Dentistry III	6.5	PEDD 730	Special Care Dentistry	1
DENS 628	Introduction to Dental Public Health	1	PEDD 733	Advanced Pediatric Dentistry	1
DENS 632	Preclinical Restorative Lecture III	1	PEDD 739	Clinical Pediatric Dentistry III	.5
DENS 633	Preclinical Restorative Lab III	1	PEDD 749	Clinical Pediatric Dentistry IV	1
DENS 642	Fundamentals of Treatment Planning	1	PERI 525	Diagnosis of Periodontal Diseases	1
DENS 662	Advanced Restorative and Digital Dentistry Lecture	1	PERI 526	Etiology and Pathogenesis of Periodontal Diseases	1.5
DENS 663	Advanced Restorative and Digital Dentistry Lab	1	PERI 627	Non-Surgical Periodontal Therapy	1.5
DENS 708	Dental Materials III	0.5	PERI 733	Surgical Periodontal Therapy	1
DENS 718	Dental Materials IV	0.5	PERI 739	Clinical Periodontics III	5
DENS 727	D3 Clinical Dentistry	8	PERI 749	Clinical Periodontics IV	1
DENS 730	Dental Practice Management III	1	PROS 624	Preclinical Removable Prosthodontics	2
DENS 735	Patient Management and Professional Conduct I	5	PROS 625	Preclinical Removable Prosthodontics Lab	4
DENS 740	Dental Practice Management IV	1	PROS 626	Clinical Principles of Dental Implantology Lecture	1
DENS 745	Patient Management and Professional Conduct II	5	PROS 628	Clinical Principles of Implantology Lab	1
DENS 752	Clinical General Practice Dentistry	13	PROS 731	Complete Denture Prosthodontics	1.5
DENS 753	D4 Treatment Planning Seminar	1	PROS 735	Removable Prosthodontics Diagnosis and Treatment	1.5
DENS 762	Clinical Service-learning	4	PROS 739	Clinical Fixed Prosthodontics III	2
ENDO 622	Principles of Endodontics	1	PROS 740	Clinical Removable Prosthodontics	3.5
ENDO 623	Principles of Endodontics Lab	1.5	PROS 749	Clinical Prosthodontics IV	2
ENDO 731	Endodontic Therapy	1	Total Hours		195
ENDO 739	Clinical Endodontics III	1.5	The minimum number of credit hours required for this degree is 195		
ENDO 749	Clinical Endodontics IV	1.5	Academic performance evaluation		
GENP 511	Dental Anatomy	2.5	The faculty of the VCU School of Dentistry has the responsibility for evaluating the student's academic performance. It is incumbent on the course directors or their designees to specify, at the time that courses first convene, the criteria to be used in student assessment and the standards by which they will be judged.		
GENP 514	Fundamentals of Occlusion	2	The VCU School of Dentistry Guidelines for the Evaluation of Student Performance and Academic Status are distributed to all students at the beginning of their study. They are available upon request from the Office of Academic Affairs, School of Dentistry.		
GENP 521	Dental Anatomy Lab	1.5			
GENP 620	Cariology	2			
GENP 739	Clinical Operative III	5			
GENP 742	Treatment Planning Seminar	2			
IPEC 501	Foundations of Interprofessional Practice	1			
ORPT 620	Oral Radiology I	1			
ORPT 621	Dental Radiology	1			
ORPT 622	Oral Pathology	3			

D.D.S.-Ph.D. opportunity

Students with an interest in academic and research careers are afforded the opportunity to undertake advanced degree training while in dental school by combining doctoral study in oral health research with a professional degree in dentistry. The program seeks to train students interested in translating oral research to the clinic. These clinician-scientists will help bridge the gap between basic and clinical science in the field of dentistry. For more information, see the dual degree program page (<http://bulletin.vcu.edu/graduate/dual-degree-opps/dds-ohr-phd/>).

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

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Senior associate dean for graduate medical education

Jean Bailey, Ph.D.
Assistant dean for faculty development

Keith D. Baker, Ph.D.
Assistant dean for admissions

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
Assistant dean for student affairs and financial aid

David X. Cifu, M.D.

Associate dean for innovation and system integration

Ralph (Ron) Clark III, M.D.
Assistant dean for ambulatory clinical affairs, interim senior associate dean for clinical affairs and president, MCV Physicians

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Anita Navarro, Ed.D.
Chief of staff

Paul Peterson
Assistant dean for administration

Wies Rafi, M.S.I.T, C.H.C.I.O.
Assistant dean for technology services

Elizabeth Ripley, M.D.
Vice dean and senior associate dean for faculty affairs

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Senior associate dean for assessment and evaluation studies

Michelle Whitehurst-Cook, M.D.
Senior associate dean for admissions

Robert A. Winn, M.D.
Senior associate dean for cancer innovation

Christopher Woleben, M.D.
Associate dean for student affairs

Cathy Wood
Senior associate dean for finance and administration

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

Mission statement

Mission

The VCU School of Medicine's mission is to improve health through exceptional and innovative discovery, training and patient care.

Vision

The VCU School of Medicine will be known for the accomplishments of its trainees, faculty, staff and alumni in research, education and patient care.

Values

The core values that guide the VCU School of Medicine's conduct, performance and decision-making are:

- Education and lifelong learning
- Respect and integrity
- Diversity and inclusion
- Communication and collaboration
- Innovation and technology
- Community engagement

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>).

School of Medicine institutional learning objectives

Patient care: The ability to provide patient-centered care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health

Students who graduate from VCU's School of Medicine will:

- Obtain and document an organized history and perform a physical examination that is appropriate for the patient's condition.
- Apply clinical reasoning to develop a differential diagnosis and create an appropriate management plan, including performance of routine procedures after informed consent
- Select, interpret and understand the indications and limitations of commonly used diagnostic tests, interventions and procedures
- Apply principles of health equity and the impact of social determinants of health in informing clinical decisions

- Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings and following up on patient progress and outcomes

Knowledge for practice: The ability to discuss the biomedical, epidemiological and social-behavioral aspects of clinical science and apply this knowledge to patient care

Students who graduate from VCU's School of Medicine will:

- Integrate the structure and function of organ systems in health and disease, including the mechanism of therapeutic agents
- Differentiate the mechanisms by which organ systems are affected by disease and correlate with the epidemiological, clinical, laboratory, radiographic and pathologic manifestations of disease
- Apply established and emerging principles of evidence-based medicine in the maintenance of health and the diagnosis and treatment of disease
- Appraise the effect of psychosocial, behavioral and social factors on health and how health care disparities and inequities impact communities and populations
- Explain the underlying ethical principles of research design and the application of the scientific method in basic, clinical and translational research

Practice-based learning and improvement: Demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning

Students who graduate from VCU's School of Medicine will:

- Engage in critical reflection and self-assessment of personal strengths and opportunities for improvement and utilize this information to address gaps in knowledge and improve patient care
- Contribute to the professional growth of self and team members by soliciting and incorporating feedback and providing formative feedback to others
- Apply current scientific evidence to optimize clinical care and improve outcomes
- Utilize available technology to gather data, support care decisions, optimize learning and improve clinical practice
- Effectively respond to patient needs while balancing personal health and well-being

Interpersonal and communication skills: Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and health professionals

Students who graduate from VCU's School of Medicine will:

- Engage in collaborative relationships and work effectively as a member of the health care team across educational, cultural and clinical environments
- Employ effective communication skills that promote shared decision-making with patients and cultivate an inclusive environment that encourages mutual respect for all individuals
- Communicate compassionately and clearly with patients and their family members to provide education and guidance while respecting individual autonomy

- Practice effective, efficient and timely communications with members of the health care team to maximize patient safety

Professionalism: Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles while developing one's professional identity

Students who graduate from VCU's School of Medicine will:

- Act responsibly with honesty, integrity, trustworthiness, sensitivity, confidentiality and compassion to create an environment that encourages respect and cultural humility for all
- Reflect upon and adjust one's own conscious and unconscious biases when interacting with diverse populations
- Participate as an active member of the learning community and facilitate lifelong learning of peers and other health care professionals
- Adhere to the ethical principles pertaining to provision, withholding or withdrawal of care; confidentiality; informed consent; and avoidance of conflicts of interest
- Demonstrate a commitment to forming one's own professional identity while executing and adhering to ethical and professional responsibilities of a physician

Systems-based practice: Demonstrate the ability to navigate the health care setting and system, identifying and utilizing available resources to provide optimal care for their patients

Students who graduate from VCU's School of Medicine will:

- Describe the organization, financing and delivery of health care in context of the larger health care system
- Engage in interprofessional collaboration and recognize the role of all members of the health care team to optimize patient care
- Advocate for access to high-value care for patients and appropriate utilization of resources to ensure individuals receive the right care at the right time
- Identify possible individual and system errors and propose solutions to support patient safety and improve quality of care

Faculty and facilities

The School of Medicine consists of more than 700 full-time faculty, including affiliates, assisted by residents, fellows and clinical voluntary faculty. Programs of instruction and research are conducted on the health sciences campus, at the McGuire VA Medical Center and at affiliated hospitals and clinical sites in an effort to expose students to the variety of clinical disorders encountered in the eastern U.S.

Criminal background checks

All applicants to the VCU School of Medicine who receive an acceptance will have a criminal background check performed by Certiphi Screening Inc. If there is a positive finding the applicant will be notified by Certiphi first; this will allow the applicant to make corrections to the report and verify the information. If there is no change in status Certiphi will then notify VCU of their positive findings. VCU's criminal background committee will meet to discuss the applicant's Certiphi report to determine if acceptance is to be withdrawn. The school encourages full disclosure at all times on the AMCAS and supplemental applications, as dishonesty will impact the committee's decision. If an applicant has a legal finding or institutional action against them after the supplemental

application is submitted they should notify the school's admissions office immediately. Once an applicant is matriculated, full disclosure is also required throughout the student's time in medical school. Criminal background checks are repeated for all students at the end of the second year and for specific program participations throughout medical school.

Health policies

Virginia Commonwealth University School of Medicine requires that all medical students carry active health insurance. Health insurance benefits must be equal to or greater than those provided by the university health carrier. In addition, it is required that all students complete required immunizations within six months of matriculation and have repeat tuberculosis screening performed prior to the third-year clerkships. For details related to these policies, please visit the school's website (<http://www.medschool.vcu.edu/>).

The School of Medicine requires that all students enrolled in the graduate academic programs administered by the school hold active health insurance coverage. This requirement applies to students at all degree categories: doctoral, master's and certificate. Compliance is monitored by administrative offices of the school and departments. Failure to comply with this requirement is grounds for dismissal.

School of Medicine Registrar

The School of Medicine houses a registrar's office to meet the needs of physician trainees and alumni. Visit the School of Medicine website (<http://www.medschool.vcu.edu/studentaffairs/registrar/>) for more information on the office.

VCU Records and Registration (<https://rar.vcu.edu/>) provides registrar services for all School of Medicine advanced (graduate) degree students.

Professional programs

The School of Medicine offers undergraduate medical education, leading to the first-professional Doctor of Medicine degree, as well as graduate medical education and continuing medical education. Refer to each program's description for admission and program requirements.

Undergraduate medical education (M.D.)

The School of Medicine offers the first-professional Doctor of Medicine that develops students' clinical skills, professionalism and critical thinking. For more information about admission standards, curriculum requirements and other policies for the M.D. program, refer to the degree program page in this Bulletin.

Graduate medical education

Graduate medical education at VCU Medical Center provides diverse opportunities with very high academic and clinical standards for medical and dental graduates to pursue specialty training. Currently the school offers more than 70 medical and dental programs. The programs are accredited by either the Accreditation Council for Graduate Medical Education or the American Dental Association. Most of the programs use the ERAS application and the NRMP matching program. The school has more than 700 residents training with the medical center and brings in approximately 200 new residents per year.

All qualified applicants are encouraged to apply to these programs. Visit the School of Medicine website for a detailed description of the qualifications and requirements (<http://www.medschool.vcu.edu/gme/>).

Student organizations

The School of Medicine, through the Office of Student Affairs, provides oversight to all of the organizations available to medical students. All student organizations are required to register with the Office of Student Affairs following established policy and the approved registration format.

For more information, visit the School of Medicine student organizations webpage at medschool.vcu.edu/studentaffairs/organizations (<http://www.medschool.vcu.edu/studentaffairs/organizations/>).

Medicine, Doctor of (M.D.)

The program for the M.D. degree is divided into four phases. The Scientific Foundations of Medicine emphasizes the basic science concepts within a clinical context every student must master to progress with a medical education. The Applied Medical Sciences integrate basic science principles with pathophysiology and treatment using an organ-system approach. The last two years include the Clinical Concentrations and Advanced Clinical Concentrations. Students are expected to successfully complete clerkships in eight core areas in addition to advanced training that assesses their competency to practice with supervision. There are opportunities for students to enroll in electives throughout the clinical concentrations to enrich their medical experience and to assist them in planning a career within a specific field of medicine.

Admissions

medschool.vcu.edu/admissions (<http://www.medschool.vcu.edu/admissions/>)

The School of Medicine participates in the American Medical College Application Service. The AMCAS application forms can be obtained from AMCAS, 2450 N. St., N.W., Washington, D.C. 20037-1126. The electronic application is available on the AMCAS website (<http://www.aamc.org/students/amcas/>). Updated information is available at the School of Medicine website (<http://www.medschool.vcu.edu>). Application for the School of Medicine should be made during the first week of June of the year preceding intended matriculation. Letters of recommendation can now be submitted with the AMCAS application.

The closing date for filing applications for this institution is Oct. 15 of the year preceding the enrollment date. Priority for admissions is given to Virginia residents; however 45 percent of each class is from out of state. Members from disadvantaged populations are encouraged to apply to the School of Medicine. Students previously dismissed from a medical school will not be considered. All applicants must be U.S. citizens, permanent residents of the U.S. or Canadian citizens at the time of application. Permanent residents must submit their cards prior to file review.

A nonrefundable \$80 application fee and supplemental information, including letters of recommendation, are required with all applications accepted for further consideration. The final date for returning supplemental information is Jan. 31 of the year of possible enrollment in the School of Medicine. Students are given individual deadlines which are 60 days from the date the Supplemental Application is granted.

The School of Medicine will not matriculate students from other health sciences schools at VCU or any other school until such students have completed the degree program for which they are enrolled.

The School of Medicine participates in the Early Decision Plan. This program permits an applicant to file a single application through AMCAS

by Aug. 1. All applicants filing under the Early Decision Plan will receive consideration for admission and a response on or before Oct. 1. All applications for the Early Decision Plan must be supported by the results of the new MCAT test at the time the application is made.

The early notification date of this plan ensures that those who are unsuccessful have ample time to request further distribution of their applications to other medical schools. Further information on the Early Decision Plan is available with the AMCAS application.

Requirements for entrance

The MCAT is required as part of the application. It is necessary that the test be taken no later than September of the year of application. This test is produced by the American College Testing Program, P.O. Box 414, Iowa City, IA 52240, and is administered in colleges and universities throughout the country. Information about the MCAT is available through premedical advisers or directly from the American College Testing Program.

Applicants may be admitted on the basis of 90 semester hours of outstanding achievement. The majority of successful candidates have a college degree at the baccalaureate level or higher. The college major for premedical students should be selected in accordance with the individual student's aptitude and interest. The prerequisites for the School of Medicine have been reduced to a minimum in order to permit the widest possible latitude in preparation for medical education.

Prerequisites for admission include a minimum of 90 semester hours (or the equivalent) in a U.S. or Canadian college or university accredited by the regional accrediting agency. This program of study must include a minimum of:

1. English – two semesters (one semester to include grammar and composition);
2. College mathematics – two semesters;
3. Biological science – eight semester hours, including laboratory experience. This requirement may be satisfied by general biology, general zoology or botany. No more than half may be botany;
4. General or introductory chemistry – eight semester hours, including laboratory. An appropriate portion of this requirement may be met by courses in analytical chemistry or physical chemistry;
5. Organic chemistry – eight semester hours, including laboratory. This course should be equivalent to and acceptable for continued studies in a chemistry major;
6. General or introductory physics – eight semester hours, including laboratory experience.

Students are encouraged to pursue their own intellectual interests in college in order to obtain a broad education consistent with their major program. Courses in medically related science areas will not relieve the student of his/her responsibility for these subjects in the medical curriculum.

Selection factors

Demonstrated academic ability, as well as attributes of character and personality, are of significance to the admissions committee in the selection process. A review of academic achievement as represented by the standard academic record and summaries, MCAT scores, evaluations and interviews are all sources of information on which the comparative evaluation process is based. A review of the completed application file and interviews with members of the admissions committee are an integral part of the admissions process.

Noncognitive variables also are sought in all candidates. These qualities include, but are not limited to, health care experience, community service and social concern, communication skills both written and oral, leadership, ethical and moral behavior, creativity, compassion and empathy, altruism, personal maturity, self-confidence without arrogance, appropriate motivation, the ability to realistically self-appraise, and a demonstrated ability to work as a team member. These qualities and characteristics are judged by references within the letters of recommendation and from a careful review of the student's essays and extracurricular activities, as well as the interviewers' assessment during the interview. The School of Medicine hopes to create a learning environment where students will meet colleagues whose life experiences and views differ significantly from their own. A physician must be at home and at ease in a wide variety of environments and with a wide variety of people. Students frequently comment that the aspect of the school they appreciate most is the diversity of their class. The admissions process seeks to foster that diversity of perspective and background by admitting students from a wide range of backgrounds – socioeconomic, cultural, geographic and educational. Health care experience is also examined as a true evaluation of the motivation of the candidate for a career in medicine.

The interview is an opportunity for the applicant to become acquainted with the institution and it offers additional information for the selection process. Only on-campus interviews in Richmond are available. Each year more applicants are interviewed than can be accepted in the class. Therefore, an interview is not an indication of acceptance to the School of Medicine.

Offers for admission are made in the Early Decision Plan on Oct. 1 and on the uniform acceptance date after Oct. 15, with admissions occurring at several points thereafter until the class selections have been completed. The approximate dates for acceptance decisions are Oct. 16, Dec. 15, Feb. 1 and March 15. At the time the class is filled, an alternate list of applicants is compiled from which replacements are drawn for any vacancies that may occur in the selected class between notification and the third week of class attendance.

Since selections are made in advance of actual attendance, all acceptances are made on condition of satisfactory completion of courses planned or in progress. It is expected that candidates will maintain acceptable standards of deportment. Students offered acceptance into a class are expected to respond within two weeks of the offer. If such a response presents a problem, extension of the time for the response should be requested. After March 31, students are selected from a wait list of very good candidates until the first day of orientation in August.

The enrollment of accepted candidates is considered complete only after payment of the \$100 deposit toward the first tuition payment. This deposit will be returned to the candidate should withdrawal occur prior to May 15 of the year of attendance. By the act of matriculation into the School of Medicine, the student accepts the responsibilities related to this opportunity and agrees that during the time that he/she is a registered student he/she will follow the rules and regulations established by the governing bodies of the School of Medicine and the university.

Transfer in advanced standing

The VCU School of Medicine does not typically consider applications for transfer admission. In the rare instance where a transfer student would be considered, the student must demonstrate rare and extraordinary personal or educational circumstances. Applicants for transfer admission

will only be considered for transfer into the clerkship (M3) year of the curriculum.

Application

In instances where there are demonstrable rare and extraordinary personal or educational circumstances, applicants for transfer must also meet the following criteria in order to be considered for admission:

- Demonstrate a compelling reason to be at the VCU School of Medicine
- Be transferring from an LCME-accredited medical school
- Be in good academic and professional standing within their current medical school
- Have the written approval of the dean of the transferring institution
- Have premedical and medical school credentials comparable to those of students in the class they will join

Students who meet the defined criteria should submit a letter to the SADA describing the compelling reason for the requested transfer no later than Sept. 1 prior to the start of the anticipated enrollment. If the student meets criteria for transfer, the SADA will confer with the SADMESA to determine if there is availability to accommodate an additional learner.

Acceptance

To be accepted for transfer into the first clinical (clerkship) year, students must have successfully applied as above and subsequently meet the following criteria:

- Successfully completed all preclinical course work at an LCME-accredited medical school
- Passed Step 1 of the USMLE licensing examination

It is a rare circumstance to have positions available for transfer. If there are more acceptable candidates than positions, selection will be based on the strength of the application. The decision of a transfer application is at the discretion of the Admissions Committee after consultation with the SADMESA regarding equivalency of educational experiences and clinical availability.

Disability support services

Virginia Commonwealth University in agreement with Section 504 of the Rehabilitation Act of 1973 and The Americans with Disabilities Act of 1990 provides reasonable accommodation to any individual who advises us of a disability. We wish to provide new and current students who have a disability the opportunity to voluntarily identify themselves.

Early identification permits the Division for Academic Success the opportunity to acquire verification of the disability, if required, and the opportunity to get appropriate accommodations in place as soon as possible. All accommodations request are handled on an individual basis. Examples of some accommodations are; extended test taking time, alternative testing format, note takers, readers, scribes, quiet testing area, sign language interpreters, assistive technology and computer software programs which are located in the library for student use.

If you are an individual with a disability and wish to identify yourself as such, please contact the Division for Academic Success. It is important to note that all disclosures are confidential and are released only with your permission. A comprehensive VCU Handbook for Students with Disabilities is available upon request. **Be sure to include your name,**

address and phone number if you write. We also are available to answer questions about accommodations and services.

Mail: Director, VCU Division for Academic Success, Box 980124, Richmond, VA 23298-0124; phone: (804) 828-9782 or VTDD (804) 828-4608; FAX (804) 828-4609; or das.vcu.edu (<http://das.vcu.edu/>)

Medical Education Curriculum

The curriculum for the M.D. degree is divided into four phases:

- Scientific Foundations of Medicine
- Applied Medical Sciences
- Clinical Concentrations (also called Clerkships)
- Advanced Clinical Concentrations

In addition, there are multiple longitudinal courses throughout the curriculum:

- Diagnostic Reasoning (pre-clinical phase)
- Geriatrics Education
- Interprofessional Education
- Physician, Patient and Society
- Point of Care Ultrasound (pre-clinical phase)
- Population Health and Evidence-based Medicine
- Practice of Clinical Medicine (pre-clinical phase)
- Telehealth (clinical phase)

M1: The Scientific Foundations of Medicine – These sections comprise the first semester and provide the foundational knowledge of the basic sciences necessary for the practice of medicine.

- Molecular Basis of Health and Disease (Biochemistry and Genetics)
- Fundamentals of Physiology
- Principles of Autonomics and Pharmacology
- Infection and Immunity (Microbiology and Immunology)
- Foundations of Disease

M1-M2: Applied Medical Sciences – These sections are taught during the second and third semesters. Using an integrated, organ-system approach, normal functioning is taught in tandem with disease and its treatment.

- Marrow (Hematology/Oncology)
- Movement (Musculoskeletal Systems) and Anatomy
- Gastrointestinal and Anatomy
- Endocrinology
- Reproduction and Anatomy
- Cardiovascular
- Pulmonary
- Renal
- Neurosciences
- Behavioral Sciences
- Anatomy Rounds

M3-M4: Clinical Concentrations – Covering the remaining two and one-half years, the clinical concentrations include traditional clinical clerkship training, electives and advanced clinical training in field(s) of interest. Scheduling flexibility permits students to intersperse elective opportunities immediately to promote exploration of career interests and maximize individual learning needs. Specialty-specific choices such as

electives and advanced clinical training opportunities are selected with the guidance of a specialty adviser. All students complete eight core clerkships, two acting internships and a variety of electives related to speciality interests:

- Core clerkships
 - Ambulatory (4 weeks)
 - Family medicine (4 weeks)
 - Internal medicine (8 weeks)
 - Neurology (4 weeks)
 - Obstetrics/gynecology (6 weeks)
 - Pediatrics (6 weeks)
 - Psychiatry (4 weeks)
 - Surgery (8 weeks)
- Advanced clinical training
 - Inpatient acting internship (4 weeks)
 - Critical care acting internship (4 weeks)
- Specialty-driven electives
 - Foundational (up to 4 weeks in clerkship phase)
 - 44 weeks of electives (24 weeks minimum of clinical elective time/20 weeks maximum on non-clinical elective time)

Geriatrics Education: Developed using the core competencies as defined by the American Geriatrics Society and the Association of American Medical Colleges, this four-year curriculum includes interactive case-based sessions, patient and caregiver panels and online case simulation. By the end of M4, students will be able to evaluate older patients that exhibit acute and chronic illness in a manner consistent with the patients' prognosis, values and goals. The management of older patients will be informed by a core-defined knowledge of age-related changes in human biology and pharmacology, as well as systems of care. Students also learn how to manage common geriatric syndromes and conditions, including (but not limited to): delirium, dementia, immobility, falls, under-nutrition, polypharmacy, pre- and post-operative complications, social isolation, failure to thrive, discharge planning, and elder abuse.

Practice of Clinical Medicine: This longitudinal course begins the first week of medical school where students participate in an intensive "boot camp" to learn the essentials of obtaining a history and physical examination. The week culminates with students performing their first complete history and physical examination on a standardized patient. Throughout the first two semesters, students learn to develop communication skills, how to ask patients about specific types of historical information and detailed organ-specific examinations. Students practice these skills using standardized patients in our state-of-the-art simulation center. The third semester, students are placed with community preceptors to practice these skills with actual patients.

Physician, Patient and Society: This course encompasses the humanistic, ethical and legal responsibility of physician to their patients and society. Topics covered include the physician-patient relationship, integrative/complementary medicine, palliative care, spirituality, health disparities, physician bias and cultural competency, and the practical application of ethics and law to the practice of medicine.

Population Health and Evidence-based Medicine: During the first three semesters, students develop an understanding of the determinants of health such as socioeconomic, educational and environmental circumstances, the assessment and measurement of health status at the population level, the ability to effectively evaluate the quality of medical literature, and biostatistics. During the clerkship phase, the course

focuses on the application of prior knowledge in analyzing evidence which contributes to decision-making in patient care.

Interprofessional Education: This course involves learners from the various health professions schools. Introductory course work encompasses topics such as team formation, defining quality, improving quality, leadership, complexity and error, measuring error, error-prevention tools and techniques, and an independent quality/safety improvement project. During the clinical and advanced clinical concentrations students will study and analyze in real time the impact of safety/quality improvement projects within the various health systems where clinical rotations are performed.

Ultrasound: The VCU Point-of-Care Ultrasound course is a longitudinal course throughout the pre-clinical curriculum. The course gives students the opportunity to learn bedside clinical ultrasound at the same time they are learning basic physical exam and history skills in their Practice of Clinical Medicine course. The course consists of sessions with ultrasound-trained practicing clinical faculty that provide direct feedback and guidance to the learner. Each session will have a standardized patient to scan, and pathology will be discussed or displayed on the simulators.

Diagnostic Reasoning: An 18-month longitudinal course that has two distinct but related purposes: 1) to help medical students prepare for M3 and beyond by honing their critical-thinking and diagnostic skills by building their differential diagnosis capabilities and 2) to help prepare for Step 1 examination by both improving critical-thinking skills and making the student practice with USMLE-style multiple choice questions. Students interview a standardized patient to obtain the pertinent histories and then utilize the case system to “order” physical exam and diagnostic studies to go from their broad differentials based on history alone, and narrow down to a final diagnosis and two plausible diagnoses that they have ruled out using their exam and diagnostic studies. Students also form clinical questions about their cases utilizing medical literature.

Telehealth: Telehealth is both the present and future of medicine. Prior to the COVID-19 pandemic, there were already advances in the delivery of virtual health care. With the emergence of COVID-19, those advances were accelerated, and this included the involvement of learners in telehealth delivery. In recognition of the increased need for telehealth, the AAMC has developed telehealth competencies that span the spectrum from new graduate to experienced physician. During the clerkship phase of the curriculum, students participate in telehealth visits as well as attend lectures that address updates in telehealth regarding initiatives to address disparities, regulatory and legal requirements, or other emerging issues, and additional opportunities for skill sessions practice.

U.S. Medical Licensing Examination

All students are required to pass the U.S. Medical Licensing Examination Step 1 prior to the start of the clinical concentrations (clerkships).

Students who do not pass the examination on the first attempt will be placed on a leave of absence. During this time the student will be allowed two additional attempts to pass the examination. Failure to pass the examination after three attempts will result in immediate dismissal. Students who fail Step 1 on the first attempt may request additional financial aid to take a commercial board preparation course. These funds will be granted one time only.

All students are required to take the USMLE Step 2 CK for the first time after completion of their core clerkships or by the annual established

date by the Office of Medical Education. Failure to do so will result in dismissal. Students are required to pass USMLE Step 2 CK for graduation. Students are allowed three attempts to pass Step 2 CK. If they do not pass by the third attempt, they will be automatically dismissed.

Withdrawal from the School of Medicine

Students may withdraw after meeting with the senior associate dean for medical education and student affairs and submitting a letter requesting withdrawal.

Requirements for graduation

The VCU School of Medicine has established the following requirements students must satisfy in order to complete the Doctor of Medicine (M.D.) program.

Advancement to the clinical curriculum

To progress to the core clerkships and electives in the M3 year, students must:

- Pass all courses in the Scientific Foundations of Medicine phase of the curriculum
- Pass all courses in the Applied Medical Sciences phase of the curriculum
- Pass the USMLE Step 1 Exam

Advancement to graduation for the M.D. program

Candidates for graduation from the four-year curriculum must:

- Pass all required and elective coursework in the four-year curriculum
- Complete and log all required clinical experiences
 - Specific requirements regarding the required clinical experiences that must be logged prior to graduation can be found in the Completion of Required Clinical Experiences Policy.
- Be in good academic standing
- Pass specified qualifying examinations including USMLE Step 1 and Step 2 CK
- Satisfactorily complete VCU CSE
- Satisfactorily complete required curricular experiences
- Demonstrate satisfactory compliance with the Technical Standards for Medical Students, including exhibiting the professional characteristics expected of a physician
 - Specific requirements regarding technical standards can be found in the Technical Standards for the M.D. Program Policy.
- Adhere to all VCU SOM and university policies

Competency-based graduation track

Candidates for graduation from the three-year CBG curriculum must:

- Pass all required and elective coursework in the three-year CBG curriculum
- Complete and log all required clinical experiences
 - Specific requirements regarding the required clinical experiences that must be logged prior to graduation can be found in the Completion of Required Clinical Experiences Policy.
- Be in good academic standing
- Pass specified qualifying examinations including USMLE Step 1 and Step 2 CK

- Satisfactorily complete VCU CSE
- Satisfactorily complete required curricular experiences
- Demonstrate satisfactory compliance with the Technical Standards for Medical Students, including exhibiting the professional characteristics expected of a physician
 - Specific requirements regarding technical standards can be found in the Technical Standards for the M.D. Program Policy.
- Adhere to all VCU SOM and university policies

VCU's clinical skills exam

All students are required to take and pass a CSE at the beginning of the fourth year of medical school to assess the core clinical skills of communication, data collection (history and physical exam), clinical reasoning (differential diagnosis, diagnostic therapeutic plan) and other institutional learning objectives. A passing score on this exam is required for graduation, and failure of this exam requires remediation, which may include retaking the exam.

Time to completion of requirements

Students must complete all required components to advance to graduation within six years of initial matriculation, including any academic leave of absence.

Sample plan of study

Note: Due to the nature of the medical curriculum, the School of Medicine deviates from the University Academic Calendar for beginning and ending semester dates.

Course	Title	Hours
M1 year		
Fall semester		
	Transition to Medical School	
	Practice of Clinical Medical Bootcamp	
	Molecular Basis of Health and Disease	
	Principles of Physiology	
	Principles of Autonomics and Pharmacology	
	Immunity and Infection	
	Foundations of Disease	
	Practice of Clinical Medicine	
	Patient, Physician and Society	
	Population Health and Evidence Based Medicine	
	Ultrasound	
	Diagnostic Reasoning	
	Geriatrics	
Spring semester		
	Marrow (Hematology/Oncology)	
	Movement (Musculoskeletal)	
	Gastrointestinal	
	Endocrine	
	Reproduction	
	Practice of Clinical Medicine	
	Patient, Physician and Society	
	Population Health and Evidence Based Medicine	
	Ultrasound	
	Diagnostic Reasoning	
	Interprofessional Education	

Geriatrics
M2 year
Fall semester
Cardiovascular
Pulmonary
Renal
Neuroscience
Practice of Clinical Medicine
Patient, Physician and Society
Population Health and Evidence Based Medicine
Ultrasound
Diagnostic Reasoning
Geriatrics
Anatomy Rounds
Spring semester
Behavioral Science
Practice of Clinical Medicine
Patient, Physician and Society
Diagnostic Reasoning
Step 1 Study
M3 year
Fall and spring semesters
M3 Transitions to Clerkships
Internal Medicine Clerkship
Surgery Clerkship
OB/GYN Clerkship
Pediatrics Clerkship
Family Medicine Clerkship
Neurology Clerkship
Psychiatry Clerkship
Ambulatory Clerkship
Foundational Career Exploratory Elective (FE)
Patient, Physician and Society
Population Health
Telehealth
Geriatrics
M4 year
Fall and spring semesters
Transition to M4
Two acting internships, one ward and one critical care (four weeks each)
Step 2 Clinical Knowledge Exam
44 weeks of electives (24 weeks minimum of clinical elective time/20 weeks maximum of non-clinical elective time)
Patient, Physician and Society
Geriatrics
Interprofessional Critical Care Simulations
Transition to residency

The competency-based graduation program allows students to complete the medical curriculum in three years instead of four and gain a head start in the chosen specialization. The program assesses competency through rigorous assessments of entrustable professional activities and specialty-specific milestones. In addition to a continuum of education,

training and practice, goals of implementing a three-year graduation program include the reduction of student debt and retaining students at VCU Health who will ultimately practice medicine in Virginia. Having students rapidly enter the workforce will aid in the impact of the impending physician shortage.

Students may express interest in the program at the end of the first year of medical school. Students are selected for the program through a rigorous review process including assessment of pre-clinical grades; audit of feedback from patient encounters, preceptors and small group leaders in the Practice of Clinical Medicine course; an interview with the specialty residency director; and an essay of interest. Approximately halfway through the third-year clerkship phase, there will be an intensive review to determine if the student is on track with their competency achievement to be able to graduate after their clerkship year (May of their third year or summer of their fourth year.) The student will apply to VCU Health or a VCU Community Family Medicine residency program and enter the match in December of their third year.

Students accepted into the competency-based graduation program follow the same third-year curriculum with the exception of the foundational elective period being replaced by the fourth-year acting internship requirement and the first block of the traditional fourth year is replaced with a critical care elective. Students are assigned to a specialty coach with whom they meet regularly to review assessment data as well as set and achieve performance and wellness goals. Students also complete the Step 2 Clinical Knowledge and Clinical Skills exams in the third year instead of the fourth.

The goal of the program is multifaceted in that it will 1) attract high-achieving students to the VCU School of Medicine, 2) improve the transition from undergraduate medical education to graduate medical education through a transparent handover including the coach, program director and student, 3) retain high-achieving students as residents at VCU Health and 4) address the physician shortage in that students who remain in Virginia for residency are more likely to stay and practice in the state.

VCU's School of Medicine participates in the Consortium of Accelerated Medical Pathway Programs, which includes more than 25 medical schools that offer an accelerated curriculum.

M.D.-Ph.D. dual degree opportunities

Overview

The M.D.-Ph.D. program trains future physician-scientists for careers that include patient care and research that advances knowledge related to human health. The program allows students to pursue both the M.D. and Ph.D. degrees using a coordinated program of study and apply a limited number of M.D. requirements toward fulfillment of requirements for the Ph.D.

The VCU M.D.-Ph.D. program is committed to a holistic application review, taking into consideration not only grades and scores, but the depth and quality of research experience, exposure to clinical medical opportunities, evidence of altruism, personal statements, and unique factors that allow the applicant to contribute to a vibrant, diverse student population. Current VCU M.D.-Ph.D. students often complete the initial review of submitted applications.

Students with disabilities, under-represented minorities and students who are disadvantaged are encouraged to apply. VCU is committed to student

diversity and makes every effort to attract and recruit applicants with diverse backgrounds.

The specific graduate school requirements for a combined Doctor of Medicine, Ph.D. are stipulated in the VCU Graduate Bulletin under each of the Ph.D. programs that have this option.

Program efficiencies

Students who enroll in the M.D.-Ph.D. program must complete all requirements for the M.D. degree, as described elsewhere in the bulletin (<http://bulletin.vcu.edu/professional-studies/medicine/medicine-md/#degreerequirementstext>). In addition to the general VCU Graduate School graduation requirements (<http://bulletin.vcu.edu/academic-regs/grad/graduation-info/>), students must complete the minimum number of graduate credit hours for each program but are permitted to apply a limited number of M.D. curriculum requirements toward fulfillment of specific requirements in the Ph.D. program. For additional information on programs, use the contact information below.

Application and admissions process

Prospective students submit applications through the American Medical College Application Service, selecting the combined medical degree/Ph.D. option. Upon review of the AMCAS documents, qualified applicants are sent supplemental admission materials. Those invited to Richmond for interviews will spend one day interviewing with members of the M.D.-Ph.D. steering committee, as well as touring labs of faculty scientists and will spend a second day in the standard interview for the School of Medicine.

In rare situations when resources allow, students matriculated in the medical school class may be considered for admission to the M.D.-Ph.D. program, usually near the start of the M1 academic year. Interested medical students initiate the process by contacting the program administrator by email. They will be asked to provide a summary of their research activities and to complete an essay explaining why they wish to be considered for the M.D.-Ph.D. program. They also must request a reference letter from someone who can evaluate their potential for research excellence to be sent directly to the program administrator. These supplemental documents and the original AMCAS application will be reviewed to determine whether an interview will be granted.

Admission of medical students to the Ph.D. phase of training takes place formally following completion of the second year of M.D. training. A copy of the student file is transferred to the Office of Graduate Education and the individual is formally accepted to Ph.D. training by the VCU Graduate School.

The requirements for a combined professional school/graduate school degree in the School of Medicine are equivalent to those required of students seeking a graduate degree alone and are determined by the individual program.

For additional information, please see the M.D.-Ph.D. program website (<http://www.mdphd.vcu.edu/>).

Program structure

M.D.-Ph.D. students are full-time students during both the professional and graduate phases of their education. They choose a graduate program and faculty adviser and begin dissertation research during the first summer of graduate studies. During the first year of graduate studies, students take formal course work and become familiar with current research topics through seminars, discussion groups and lectures by

distinguished scientists. Following completion of the research project and defense of the doctoral dissertation, graduates are equipped to participate in virtually any area of current biomedical research in the most prestigious laboratories.

The program begins in June prior to the first year of medical school with orientation and pre-matriculation laboratory rotations before the start of medical school classes. During the first two years, students complete the pre-clinical phase of medical school and take the first part of the United States Medical Licensing Examination. They then move directly to M3 orientation and six to eight weeks of clinical rotations. At that point they formally move to the graduate school and choose a Ph.D. program for their dissertation research.

Graduate-level course work, examinations and research are guided by the dissertation adviser and the dissertation committee, with oversight by members of the M.D.-Ph.D. steering committee. The main undertaking at this phase is research that leads to the Ph.D. dissertation. However, students acquire additional clinical skills by completing their required ambulatory core rotation longitudinally during the second and third year of graduate studies and a foundational clinical elective during the fourth year of graduate studies. After completion of all doctoral degree requirements, students return to complete their required third year medical school clinical rotations. Flexible timing of the return to full-time medical school and limited requirements during the final year of studies allow students to complete their requirements and pursue additional research projects.

Participating programs

- Medicine, Doctor of (M.D.)/Biochemistry, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-biochem-phd/>)
- Medicine, Doctor of (M.D.)/Biomedical Engineering, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-biomedeng-phd/>)
- Medicine, Doctor of (M.D.)/Clinical and Translational Sciences, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-clintransci-phd/>)
- Medicine, Doctor of (M.D.)/Human Genetics, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-humgen-phd/>)
- Medicine, Doctor of (M.D.)/Integrative Life Sciences, Doctor of Philosophy (Ph.D.) with a concentration in behavioral and statistical genetics [dual degree program] (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-ils-beh-stat-gen-phd/>)
- Medicine, Doctor of (M.D.)/Integrative Life Sciences, Doctor of Philosophy (Ph.D.) with a concentration in bioinformatics and genome sciences, Doctor of (Ph.D.) [dual degree]
- Medicine, Doctor of (M.D.)/Microbiology and Immunology, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-microimm-phd/>)
- Medicine, Doctor of (M.D.)/Neuroscience, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-neuro-phd/>)
- Medicine, Doctor of (M.D.)/ Oral Health Research, Doctor of Philosophy (Ph.D.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-ohr-phd/>)
- Medicine, Doctor of (M.D.)/Pharmacology and Toxicology, Doctor of (Ph.D.) [dual degree] (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-pharmtox-phd/>)

- Medicine, Doctor of (M.D.)/Physiology and Biophysics, Doctor of Philosophy (Ph.D.) [dual degree] (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-physbio-phd/>)
- Medicine, Doctor of (M.D.)/Public Health, Master of (M.P.H.) (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-mph/>)

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M.D.-M.S. dual degree opportunities

Students in the Doctor of Medicine program at VCU are eligible to apply for admission to select master's programs administered by the School of Medicine. Students should contact the director of the master's program of interest and the director of the M.D. program for additional information including eligibility requirements and application instructions. A student in the M.D. program admitted to a master's program is eligible to enroll after completing their second year of M.D. training; will typically complete the master's degree in 12 months during which they are on hiatus from their M.D. training; and will then return to their M.D. training. Students might be eligible for support for graduate tuition, fees and a stipend while completing the master's program.

Other M.D. dual-degree opportunities

Students in the M.D. program also have an opportunity to pursue a dual degree with the following programs:

- M.D./Master of Public Health (<http://bulletin.vcu.edu/graduate/dual-degree-opps/md-mph/>)

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.

Administration

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Laura M. Frankart, Pharm.D., M.Ed., BCPS
Director of education and assessment

Luis Correa
Senior director of development

Larvell Davis, M.S., M.B.A.
Director of technology

Accreditation and Complainant policy

Pharmacy (Pharm.D.) accreditation

The Doctor of Pharmacy degree program at the Virginia Commonwealth University School of Pharmacy is fully accredited by the Accreditation Council for Pharmacy Education, 190 S. LaSalle St., Suite 3000, Chicago, IL 60603-3446. Accreditation standards are available in the school's Office of Admissions and Student Services and via the ACPE website (<http://www.acpe-accredit.org>). In 2023 accreditation was extended until 2031. Additionally, the school is a member of the American Association of Colleges of Pharmacy.

Complainant policy

ACPE has an obligation to assure itself that any institution that seeks accreditation status for its professional degree program conducts its affairs with honesty and frankness. Students who have complaints about the school's ability to meet accreditation standards or adhere to ACPE policies and procedures shall be submitted in writing to the Associate Dean for Admissions and Student Services, VCU School of Pharmacy, 410 N. 12th St., Room 500, Richmond, VA 23298-0581. The complainant is welcome to make an appointment to meet with school administrators to discuss their complaints and options for resolution. If they are not satisfied with the response by the school's representative(s), then complainants may contact ACPE at 190 S. LaSalle St., Suite 3000, Chicago, IL 60603-3446 or online with a complaint (<http://www.acpe-accredit.org/complaints/>). A record of written complaints about the school's adherence to ACPE accreditation standards or policies and procedures will be maintained for ACPE to review at the time of an accreditation site visit.

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

1. Innovation

We encourage innovations and ideas that enhance the school's mission.

2. Personal growth

We pursue professional growth and personal development that drives excellence.

3. Integrity and respect

We demonstrate ethical behaviors, personal responsibility and respect for others.

4. Collaboration

We embrace interprofessional and interdisciplinary collaboration in patient care, teaching, learning and research.

5. 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 the VCU Health Sciences Research Building 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. 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 Health Sciences Library 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 Center for Drug Discovery 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.

Department of Medicinal Chemistry

Umesh R. Desai, Ph.D.

Professor and chair

The Department of Medicinal Chemistry applies the latest strategies and concepts from several broad scientific disciplines — including synthetic chemistry, molecular modeling, computational biology, biological chemistry, structural biology and pharmacology — to discover new pharmaceutical agents and their mechanism of action in various diseases impacting humans.

Department of Pharmaceutics

Douglas H. Sweet, Ph.D.

Professor and chair

The Department of Pharmaceutics is a multidisciplinary community concerned with the process of transforming chemical entities into dosage forms that deliver and maintain appropriate drug concentrations, while being used safely and effectively by patients. Department faculty bring together expertise in physical pharmacy, biopharmaceutics, clinical pharmacokinetics, formulation, bioanalysis, drug metabolism and drug transport to support their educational and research missions. Graduates of the program pursue successful academic, federal and industrial pharmaceutical careers.

Department of Pharmacotherapy and Outcomes Science

Dave L. Dixon, Pharm.D., FACC, FCCP, FNLA, BCACP, CDCES, CLS

Professor and chair

The Department of Pharmacotherapy and Outcomes Science is the largest of the three departments at the VCU School of Pharmacy. The focus of the department is pharmacotherapy (the safe and effective use of drugs in humans) and pharmacy administration (evaluation of the social and economic impact of drug therapy in humans and in health care systems).

Pharmacy, Doctor of (Pharm.D.)

The school offers the Doctor of Pharmacy degree as a professional degree program. Students must complete a minimum of 52 semester hours before admission. The Doctor of Pharmacy degree is awarded after four years of study.

Educational outcomes

Graduates will demonstrate competencies in the following areas:

Foundational knowledge: The graduate is able to develop, integrate and apply knowledge from the foundational sciences (i.e. biomedical,

pharmaceutical, social/behavioral/administrative and clinical sciences) to evaluate scientific literature, explain drug action, solve therapeutic problems and advance population health and patient-centered care.

Patient-centered care: The graduate is able to provide patient-centered care as the medication expert (collect and interpret patient information; prioritize and formulate assessments and recommendations into a plan; implement, monitor and adjust plans; and document activities) to optimize health outcomes.

Medication use systems management: The graduate is able to apply professional standards to manage patient health care needs using human, financial, technological and physical resources to optimize the safety and efficacy of medication use systems.

Health and wellness: The graduate is able to implement evidence-based prevention, intervention and educational strategies for individuals and communities to improve health and wellness and manage disease.

Population-based care: The graduate is able to use population-based health data to interpret practice guidelines and evidence-based best practices to provide patient-centered care.

Problem solving: The graduate is able to identify problems; explore and prioritize potential strategies; and design, implement and evaluate a viable solution.

Education: The graduate is able to educate all audiences by determining the most effective and enduring ways to impart information and assess learning.

Patient advocacy: The graduate is able to represent the patient's best interests by considering individual differences, values, preferences and needs when providing patient-centered care.

Interprofessional collaboration: The graduate is able to engage and actively participate in shared decision-making as a health care team member by demonstrating mutual respect, understanding and values to meet patient care needs.

Cultural sensitivity: The graduate recognizes social determinants of health care disparities in access to and delivery of quality care.

Communication: The graduate is able to effectively communicate verbally and nonverbally when interacting with individuals, groups and organizations.

Self-awareness: The graduate is able to enhance personal and professional growth through reflection on personal knowledge, skills, abilities, beliefs, biases, motivation and emotions.

Leadership: The graduate is able to demonstrate responsibility for creating and achieving shared goals, regardless of position.

Innovation and entrepreneurship: The graduate is able to engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

Professionalism: The graduate is able to exhibit professional behaviors, ethics and values consistent with the VCU School of Pharmacy attributes of professionalism that are consistent with the trust given to the profession by patients, other health care providers and society.

Licensing and reciprocity

Applicants for the North American Pharmacist Licensure Examination must present evidence that their first-professional degree was granted by a school of pharmacy recognized by the board. This School is among those recognized. Applicants must also present evidence of completion of 1,500 hours of practical experience. Completion of the school's Pharm.D. program satisfies this requirement. APPE rotations completed outside of the United States may not be counted toward the 1,500-hour requirement.

Those students who intend to be licensed in Virginia should contact the Virginia Board of Pharmacy, 9960 Mayland Dr., Suite 300, Richmond, VA 23233-1463.

Academic regulations

Matriculation in the School of Pharmacy implies a willingness on the part of students to comply with university rules and regulations and to conduct themselves in a manner befitting members of the profession the students seek to enter. The program of study and regulations regarding courses of study, student conduct, etc. are subject to modification without notice. All rules and regulations set forth in this bulletin, as well as other statements issued by administrative officers of the university, apply until further notice.

Probation

Students may be placed on probation by either the Admissions Committee or the Academic Performance Committee. Probation is a status indicating that the student's academic performance is deficient and is expected to be improved to a level considered to be satisfactory by the faculty. Students who fail to meet probationary stipulations may have their progress through school interrupted. They may be required to repeat a class, a year, a semester or to withdraw. Students on probation during the first three years of the professional program are neither allowed to hold an elected office in a student association nor be eligible for nomination as an officer in a student association. Students on probation are not permitted to represent the school in extracurricular activities (e.g., representation at a local, regional or national association meeting, or other professional event). All students on probation are encouraged to discontinue any outside employment during the academic year. Students on probation are not eligible to pledge a professional fraternity. Students are encouraged to avail themselves of special tutoring and counseling services for improving their academic performance. Expiration of probationary status occurs following the equivalent of an academic year (i.e., two consecutive semesters of successful academic performance during the first three professional years) and upon the successful completion of all advanced pharmacy practice experiential rotations in the fourth year.

Outside work

In general, the Faculty believes that students should give first priority to their school work. Students able to maintain academic standing are not restricted with respect to outside employment. Students in academic difficulty will be advised to cease or drastically curtail any outside employment.

Honor code

All students are governed by the honor code and regulations of the VCU Honor System. The VCU Honor System is based on the foundation that Virginia Commonwealth University recognizes that honesty, truth and integrity are values central to its mission as an institution of

higher education. In a community devoted to learning, a foundation of honor must exist if that community is to thrive with respect and harmony. Therefore, members of the academic community are required to conduct themselves in accordance with the highest standards of academic honesty and integrity. Additional information is available on the Student Conduct and Academic Integrity website (<https://conduct.students.vcu.edu/>).

Advising program

Students in the School of Pharmacy seek assistance with academic and personal problems through the school's Office of Admissions and Student Services. Students are provided with information about accessing resources within the school, university and professional community. Also, faculty members serve as mentors to students throughout the four year curriculum.

There is a faculty adviser to the Interfraternity Council as well as an adviser for each of the professional pharmacy fraternities. Each of the student chapters of professional pharmacy organizations within the school also has a designated faculty adviser.

Attendance regulations

The following regulations apply specifically to students enrolled in the Doctor of Pharmacy program in all of their required and elective courses offered by departments in the School of Pharmacy.

1. The faculty considers class attendance at lectures to be an important component in the successful acquisition of knowledge and skills required of the Doctor of Pharmacy candidate. Students are strongly encouraged to attend all classes and conferences. An individual faculty member may require attendance in his or her course and establish penalties for those who are absent without an excuse from the dean's office.
2. Attendance at laboratory and prelaboratory classes is mandatory. Students must complete all laboratory assignments before a passing grade can be assigned. An excused absence from the dean's office is required for missing a laboratory or prelaboratory class with the ability to make up the work with credit. Students without an approved absence are still required to make up the work but will not receive credit toward their course grade.
3. Students must take tests (e.g., quizzes, laboratory practicals, examinations) and complete all other assignments at the time designated by the course coordinator. Students must recognize that faculty may give unannounced tests at any time during a course, consistent with documentation in a course syllabus. Students who miss any test in any course without an excused absence from the dean's office will receive a grade of zero for the specific test.
4. Attendance during each assigned clerkship period is mandatory. If a student is unable to attend to required clerkship responsibilities because of illness or other exceptional circumstances, the preceptor must be notified immediately. It is the responsibility of the student to also notify the clerkship director concerning a plan to make up the absence, with the approval of the preceptor. Documentation of the absence and approval to make up the absent time will be maintained in the student's record.
5. Absences may be excused under certain conditions. Requests for excuses for unavoidable absences must be submitted to the dean's office electronically within 24 hours of returning to the School of Pharmacy. The student must complete the Absence Record form with an explanation for the absence. Further explanation, if necessary, may be provided to the associate dean for admissions and student services. It is a violation of the honor code to make false or misleading statements on the Absence Record form. In the event of an unexcused absence, the student is responsible for all work missed.
6. A guiding principle in determining whether or not an absence will be excused is that the absence is caused by circumstances beyond the student's control. The following are considered valid excuses for being absent from a class or clerkship.
 - a. Illness, a medical emergency, a dental emergency. The school normally accepts the student's judgment that the condition was serious enough to justify the absence from class; however, the school reserves the right to require a medical opinion, particularly if the period of absence is prolonged or is repetitive. The school will require a written medical opinion when a student is absent from taking a scheduled test or final examination. If the absence is a result of a medical emergency, the student will be required to sign a written release for the school to obtain documentation from their physician describing the exact nature of the illness or emergency. This record will be submitted to the associate dean for admissions and student services as a confidential document. Some students may experience persistent or chronic health concerns that impact academic performance or attendance. Students are encouraged to meet with the director for student success or the associate dean of admissions and student services to develop a plan that prioritizes health and promotes student success. Information pertaining to a student's health is confidential within the Office for Admissions and Student Services. A student may choose to share their personal information pertaining to absences with faculty members and they are welcome to do so.
 - b. Death of a relative or friend. Students will be excused from class to attend funerals. Absence beyond the day of the funeral will be excused for periods of mourning required by a student's religious or cultural tradition, or when a student is too grief-stricken to return immediately to class.
 - c. Mandatory court appearance.
 - d. Mandatory religious observances. Students who anticipate absences from class because of religious obligations should submit a list of their anticipated absences at the beginning of each semester to the dean's office.
 - e. Failure of private, public or university transportation. Students are expected to take reasonable precautions to assure that the transportation method used is fully functional (e.g., maintaining personal automobile, avoiding the last possible return airline flight to Richmond). Proof of transportation failure will be required.
 - f. Attendance at professional meetings. Students in good academic standing may receive an excused absence from class to attend a meeting of a professional pharmacy organization. The student must complete an Absence Record form in advance of attending a professional meeting. A policy statement containing eligibility criteria is distributed to all students.
 - g. One personal day per semester. P1-P3 students are allocated one personal day per semester. There are instances where students would like to attend events that are significant for family and friends and that would require them to be away from classes. At the beginning of each semester, students can submit to the Office for Admissions and Student Services the request for one day to attend a significant life event. Documentation must be submitted with the request and can include an invitation or announcement

detailing the event which may be a wedding, graduation, military ceremony, anniversary celebration, retirement celebration, etc. The deadline for submissions will be consistent with the deadline for the intention to observe religious holidays, and submissions that occur following the deadline will not be accepted. Absences for weddings, graduation ceremonies of relatives or friends, family vacations, anniversaries, birthdays and other personal events are not considered as excused absences. However, a student should make their own personal decision about attending such events after considering the consequences of an unexcused absence. Further, students must make up time missed from rotations for such circumstances.

Tardiness is a form of absence that also may be excused using the criteria mentioned above. Students arriving late for a test may be given the test without an excused absence but will not be allowed extra time beyond the scheduled termination of the test. Once any student has completed the test and left the room, late-arriving students will not be permitted to take the test unless the absence is excused.

Absences that are not reported within 24 hours after the student returns to school will be considered unexcused. It is not the responsibility of a faculty member to determine whether an absence is excused. This determination will be made by the dean's office.

Students are expected to make every effort to keep abreast of their assignments during an absence. They should also be prepared to take tests upon their return to the school or at the discretion of the faculty member after considering the student's academic schedule. If, in the opinion of the dean's office, the nature of a student's absence made it impossible for that student to prepare for a test, the student will be granted an extension for taking the test.

The faculty member usually provides an equivalent make-up test within a reasonable period of time. The type and format of the make-up exam will be determined by the faculty member. Within the framework of the honor code, it may be possible to administer the same examination no more than 48 to 72 hours after the originally scheduled examination. Any make-up examination should be scheduled as soon as possible to avoid impeding the student's academic progress.

Academic progression

Attending pharmacy school is not a right acquired simply by conforming with the entrance requirements and paying tuition and fees. For this reason the dean and the Academic Performance Committee require that marginal or failing performance be improved or that the student withdraw from school. D grades are indicative of marginal performance. Careful consideration is given during the promotions process not only to the student's grades but also to his or her probity, industry and scholastic ability.

These guidelines delineate the course of action to be taken by the committee. Decisions regarding individual students will be made in accordance with these guidelines. Consideration will be given to pertinent information and extenuating circumstances for individual cases. The following statements present the prominent features of the promotions process.

1. Process for academic progression

- a. Students are evaluated for academic progression in the Doctor of Pharmacy degree program at the end of each semester by the Academic Performance Committee. At the end of the fourth year the entire faculty will decide whether or not students have

satisfied all requirements for graduation. Promotion decisions are based on achievement during the year under review and on the student's overall progress.

- b. Students who have completed all course requirements each semester with minimum grades of C will progress to the next semester in the program.
- c. The Academic Performance Committee reviews the academic record of each student who fails to pass a course, receives a D grade, does not maintain a minimum GPA of 2.0 or is on academic probation, at the end of the fall or spring semester. When special circumstances require a review before scheduled meetings, the chair will convene a subcommittee to act on behalf of the full committee. Following each review, the committee may recommend a warning be given, promotion on a probationary basis, a repeat of any failed courses, a repeat of an entire semester, termination from the program or some combination of these academic sanctions.

2. Course-level performance criteria

- a. A, B, C, D and F grades will be awarded for courses with ordinal grading scales. Standardized criteria for performance scores will be A \geq 90.00; B \geq 80.00; C \geq 70.00; D \geq 65.00; F < 65.00 unless stated otherwise in the course syllabus. Students are directed to course syllabi for specific grading scales.
- b. P (pass), H (honors), HP (high pass) and/or F (Fail) grades will be awarded for courses with nominal grading scales. Students are directed to course syllabi for specific scales for assigning grades.
- c. A student who receives a grade of F (Fail) in a required course is placed on academic probation. Students must repeat the failed required course and earn a passing grade to avoid additional academic performance sanctions.
- d. Students who are on academic probation are deemed to be deficient in scholarship. They are neither allowed to hold an elected office in a student association nor eligible for nomination as an officer in a student association. Students are not permitted to represent the school in extracurricular activities (e.g., representation at a local, regional or national association meeting or other professional event). Students are expected to discontinue any outside employment during the academic year. Students are not eligible to pledge a professional fraternity.
- e. Students repeating all or any portion of a failed course must register to retake the failed course with the same course number, title and credit hours. A student is allowed to retake a course only once. The timing of any course retake is at the discretion of the respective course coordinator and department chair.
- f. A student who receives a grade of F (Fail) in an elective course is placed on academic probation. Students must repeat and pass the failed elective course to have it count toward meeting the electives requirement in the Doctor of Pharmacy degree program.
- g. If a student retakes a course at a time other than the regular course semester offering (e.g., during the summer), the criteria for academic performance and assessments must be specified in advance of the offering and acknowledged by the student. Students may be required to pay additional tuition for courses retaken during the summer.
- h. D grades are passing but considered indicative of marginal performance. A student receives an academic warning when achieving a grade of D in any required or elective classes.

Additional grades of D or F will result in academic probation or other academic performance sanctions.

- i. Students must receive passing grades for all required and elective courses in the Doctor of Pharmacy degree curriculum to avoid probation or other academic performance sanctions.
3. **Across curriculum performance criteria**
 - a. Some courses in the Doctor of Pharmacy degree curriculum occur over more than one semester and are subject to different policies than courses that are offered for only one semester. Students are directed to course syllabi for specific grading scales.
 - b. Students who fail a course prior to the start of an introductory pharmacy practice experience may proceed with the IPPE rotation.
 - c. No student may start an advanced pharmacy practice experience rotation until all P1-P3 course requirements are satisfactorily fulfilled. Students who successfully retake failed courses can begin their APPEs depending on site/preceptor availability.
 4. **Overall performance criteria**
 - a. A student may fail no more than two courses during the P1-P3 years. A student failing more than two courses in the P1-P3 years may be dismissed from the program.
 - b. Students must have passing grades in eight APPE courses in the P4 year. A student who receives a failing APPE grade must repeat the APPE course at a site to be determined by the director of the Office of Experiential Education. Only one failing APPE course grade is permitted. A second failing APPE grade will result in dismissal.
 - c. All failing grades will be entered and retained in the student's transcript. Grades for courses that are repeated after failing and then passed will be added to but not replace the failing grade on the transcript. Failing grades for courses in the P1-P3 years will count in the calculation of student grade-point averages.
 - d. A minimum cumulative grade point average of 2.0 must be maintained by students enrolled in the Doctor of Pharmacy degree program. A student with a GPA less than 2.0 at the end of any semester will be placed on probation.
 - e. Students who fail to meet conditions of academic probation spelled out in the academic probation letter may be required to repeat a year in the program or may be dismissed from the program. Students will not be allowed to repeat more than one year of the curriculum.
 - f. The sanction of academic probation is removed after students successfully meet the academic progression standards for two consecutive semesters of attendance.
 - g. To be awarded the Doctor of Pharmacy degree, students must complete all required courses with a passing grade and achieve a minimum cumulative GPA of 2.0 within seven years from the date of enrollment in the program.

Withdrawal

Students finding it necessary to withdraw from the School of Pharmacy must comply with the provisions for withdrawal set by the university.

The dean of the School of Pharmacy will not approve a request for withdrawal until the student has submitted a letter of resignation.

Students withdrawing without approval and failing to check out laboratory lockers will be assessed a fee and any charges resulting from the need to replenish the contents of the lockers.

Readmission

Students seeking readmission to the School of Pharmacy will be evaluated on their total academic record. Applicants for readmission to the first professional year will not be given priority over new applicants but must compete with them on an equal basis. Readmission in advanced standing will be considered on a space-available basis.

Graduation

Students are recommended and approved for the Doctor of Pharmacy degree by the faculty of the School of Pharmacy. Candidates must meet the following requirements:

1. Be of good moral character
2. Satisfactorily complete all the required work in a timely fashion, which will not normally exceed five years from the date of initial enrollment
3. Pay all fees prior to commencement
4. Complete the last year's work for the degree in residence in this school
5. Be present at the commencement-related exercises unless excused in writing and in advance by the dean
6. Satisfactorily complete the minimum number of required advanced practice experience rotations and demonstrate the attainment of minimum competencies

Financial aid

See the Professional studies section of this bulletin.

Courses of instruction

Enrollment in courses included in the Doctor of Pharmacy curricula summarized on the preceding pages requires the approval of the dean of the School of Pharmacy unless the student has been admitted to the Doctor of Pharmacy Program.

Applicants for admission to the School of Pharmacy must complete, at minimum, 52 semester hours or 78 quarter hours of course work taken at a U.S.-accredited college/university and complete the specified course requirements prior to admission..

Students planning to seek a degree in pharmacy upon high school graduation should plan their high school program to meet the requirements for admission in the college where they will take the prerequisite work for admission into the VCU School of Pharmacy.

The minimal admission requirements are listed. (Meeting these requirements does not, however, guarantee acceptance into the VCU School of Pharmacy.)

1. Three letters of reference are required. These include a reference from a science professor, a health professional (pharmacist preferred) and an employer.
2. An official transcript from the student's primary college and all colleges attended must be supplied. Applications are considered by the admissions committee only after transcripts on file show completion of no fewer than 30 semester hours or 45 quarter hours of college work. When offered, an acceptance is contingent upon satisfactory completion of specific work that may be in progress.

3. Applicants must present the required credits in the following subject areas for a minimum total of 52 semester hours.

Course	Title	Hours
General biology (lecture and laboratory)		8
College chemistry (lecture and laboratory)		8
Organic chemistry (lecture and laboratory)		8
Physics (lecture and laboratory)		4
Human anatomy ¹		3
Human physiology		3
Microbiology ¹		3
Biochemistry		3
English ²		6
Calculus		3
Statistics		3
Minimum		52

1

One hour of lab in these subjects is also preferred.

2

At least three semester hours of composition and rhetoric is required. Up to three semester hours can be fulfilled with documentation of a writing-intensive course.

Due to the importance of a strong biomedical science foundation for success in the Doctor of Pharmacy program, some or all of the courses listed below are suggested.

Course	Title	Hours
Genetics		3
Molecular biology		3
Immunology		3
Cell biology		3

4. Credits earned through Advanced Placement Tests of the College Board or International Baccalaureate may be accepted for select courses. AP/IB credit may excuse a student from taking a specific non-science course such as English, but the credits must be made up through additional electives. The only science and math AP/IB courses that will be acceptable to meet prerequisite requirements are calculus, statistics and physics. Other AP/IB credits in science (e.g., biology, chemistry) may be made up with courses in kind. Generally this requirement is achieved by taking advanced-level courses in the same discipline (e.g., physical chemistry as a substitute for AP/IB credit in general chemistry).
5. Dual-credit courses taken during high school may be considered acceptable for transfer credit pending review of college transcripts.
6. Applicants must have earned a creditable average (C or better) overall, and in the courses specified, to meet minimum academic requirements for admission.
7. Applicants for admission must apply online through PharmCAS, a centralized application service for pharmacy schools. The PharmCAS website at [pharmcas.org](http://www.pharmcas.org) (<http://www.pharmcas.org>) provides further details.
8. An on-campus interview is mandatory for admission consideration.

9. Applicants are required to take the Pharmacy College Admission Test before admission.
10. Applicants whose first language is not English and who have not lived in the U.S. for at least 10 years should submit scores from the Test of English as a Foreign Language, the Test of Spoken English or other proof that their command of English is sufficient to allow successful completion of all requirements of the program.
11. Students are admitted only at the start of the academic year. An applicant must complete two full years of the academic prerequisites before an application can be reviewed. The Admissions Committee begins reviewing applications during September of the year preceding admission. It is to the applicant's advantage to apply during the fall of the year before expected enrollment in the School of Pharmacy. Applicants are accepted pending satisfactory completion of all prerequisite courses. Notification usually occurs in early spring.
12. Prior to enrolling, successful applicants must meet the immunization requirements set forth in the "Professional study" section of this bulletin. Prior to entering the fourth professional year, students must satisfy all university and APPE site immunization requirements.
13. Applicants exercising the early decision option for admission to the VCU School of Pharmacy must submit their fee and official transcript from all postsecondary institutions ever attended to PharmCAS by the specified deadline. Applicants whose materials are not received or whose applications are incomplete by these deadlines will be ineligible for the early decision option, and they will be deferred to regular admission status. Applicants exercising the early decision option are expected to make a commitment to attend the VCU School of Pharmacy if accepted. If an acceptance offer is not made under the early decision option, the applicant is then moved to regular admission status and continues to be evaluated for admission during the remainder of the admission cycle. The applicant is then free to apply to other schools of pharmacy under the regular admission procedure.
14. Applicants pursuing "regular admission" to the VCU School of Pharmacy must submit the electronic application, letters of reference and transcripts to PharmCAS by the specified deadline. Applicants who do not meet these PharmCAS deadlines will be ineligible for admission to the VCU Doctor of Pharmacy degree program.
15. Applicants to the program must complete all prerequisites at a U.S.-accredited institution.

The following criteria are considered in judging applicants:

- College attended
- Academic workload carried
- College overall GPA
- Chemistry, biology and math proficiency
- Outside activities and achievements in high school and college
- PCAT scores
- Written and oral communication skills
- Extent of exposure to pharmacy practice
- Extent of exposure to other health disciplines
- Personal interview

Time demands for this full-time program are rigorous. In general, the first three years require a Monday to Friday (8 a.m.-6 p.m.) commitment for lectures, conferences, laboratories and off-campus visits to area pharmacy practice sites. The fourth year is devoted to experiential learning at sites located throughout Virginia. Students enrolling in the four-year professional degree program must agree to the possibility of

being assigned to sites beyond the Richmond metropolitan area (e.g., eastern, northern or western Virginia). Candidates must assess personal obligations prior to seeking application.

VCU does not discriminate against qualified applicants for admission who have disabilities, and seeks to provide reasonable accommodation to applicants and admitted students who identify themselves as having disabilities. Academic requirements essential to the program or to directly related licensing requirements will not be substituted. Upon acceptance into the program, students in need of accommodation may contact the MCV Campus coordinator for students with disabilities at (804) 828-9782 to discuss their needs.

Further information may be obtained by writing to the Chair, Admissions Committee, School of Pharmacy, Virginia Commonwealth University, P.O. Box 980581, Richmond, VA 23298-0581. Applicants also may call a toll-free telephone number, (800) 330-0519 for assistance.

Curriculum requirements

Course	Title	Hours
IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
IPEC 561	IPE Virtual Geriatric Case	2
MEDC 527	Basic Pharmaceutical Principles for the Practicing Pharmacist	3
MEDC 533	Pharmacognosy	2
MEDC 542	Biotechnology-derived Therapeutic Agents	1
MEDC 553	Concepts in the Medicinal Chemistry of Therapeutics Agents	1
PCEU 507	Pharmaceutics and Biopharmaceutics I	3
PCEU 508	Pharmacokinetics	3
PCEU 509	Pharmaceutics and Biopharmaceutics II	3
PCEU 615	Applied Pharmacokinetics	2.5
PHAR 501	Pharmaceutical Calculations	1
PHAR 509	Evidence-Based Pharmacy I: Introduction to Pharmacy Information Skills	1.5
PHAR 513	Contemporary Pharmacy Practice	2
PHAR 515	Continuous Professional Development I	1
PHAR 523	Foundations I	1.5
PHAR 524	Foundations II	1.5
PHAR 526	Community Pharmacy Practice	2
PHAR 529	Clinical Therapeutics Module: Introduction to Special Populations	2
PHAR 530	Introductory Pharmacy Practice Experience: Community Practice	4
PHAR 532	Introductory Pharmacy Practice Experience: Hospital Practice	3
PHAR 533	Introductory Pharmacy Practice Experience: Patient Care	.5
PHAR 534	Foundations III	1.5
PHAR 535	Foundations IV	1.5
PHAR 540	Self-Care and Alternative and Complementary Treatments	2.5
PHAR 541	Patient Assessment in Pharmacy Practice	2
PHAR 544	Clinical Therapeutics Module: Cardiovascular	4.5
PHAR 545	The U.S. Health Care System	2
PHAR 546	Pharmacy-based Immunization Delivery	1.5
PHAR 549	Personalized Medicine	1
PHAR 551	Pharmacy-based Point of Care Testing	1.5
PHAR 555	Clinical Therapeutics Module: Endocrinology	2.5
PHAR 556	Clinical Therapeutics Module: Neurology	4
PHAR 565	Evidence-based Pharmacy II: Research Methods and Statistics	2.5
PHAR 566	Evidence-based Pharmacy III: Drug Literature Evaluation	2
PHAR 602	Clinical Therapeutics Module: Psychiatry	3
PHAR 603	Clinical Therapeutics Module: Respiratory/Immunology	2.5
PHAR 604	Clinical Therapeutics Module: Infectious Diseases	4.5
PHAR 605	Clinical Therapeutics Module: Hematology/Oncology	2.5
PHAR 606	Clinical Therapeutics Module: Nephrology/Urology	2
PHAR 607	Clinical Therapeutics Module: Dermatology/EENT	2
PHAR 615	Continuous Professional Development II	1
PHAR 618	Clinical Therapeutics Module: Gastrointestinal/Nutrition	2.5
PHAR 619	Clinical Therapeutics Module: Women's Health/Bone	2
PHAR 620	Clinical Therapeutics Module: Critical Care/Toxicology and Complex Patients	2.5
PHAR 621	Pharmacoeconomics	2
PHAR 640	Foundations V	1.5
PHAR 645	Foundations VI	1.5
PHAR 652	Health Promotion and Communication in Pharmacy Practice	2.5
PHAR 660	Community Pharmacy Practice Management II	1.5
PHAR 715	Continuous Professional Development III	1
PHAR 724	Pharmacy Law	2.5
PHAR 730	Continuous Professional Development IV	.5
PHAR 760	Acute Care Pharmacy Practice I	5
PHAR 761	Advanced Hospital Pharmacy Practice	5
PHAR 763	Ambulatory Care Pharmacy Practice	5
PHAR 765	Elective I	5
PHAR 766	Elective II	5

PHAR 767	Clinical Selective I	5
PHAR 768	Advanced Community Pharmacy Practice	5
PHAR 773	Acute Care Pharmacy Practice II	5
PHTX 606	Introduction to Pharmacology of Therapeutic Agents	1
Electives		5
Total Hours		155

The minimum number of credit hours required for this degree is 155.

Plan of study

P1 year

Fall

IPEC 501	Foundations of Interprofessional Practice	1
MEDC 527	Basic Pharmaceutical Principles for the Practicing Pharmacist	3
MEDC 533	Pharmacognosy	2
PCEU 507	Pharmaceutics and Biopharmaceutics I	3
PHAR 501	Pharmaceutical Calculations	1
PHAR 509	Evidence-Based Pharmacy I: Introduction to Pharmacy Information Skills	1.5
PHAR 515	Continuous Professional Development I (continues)	1
PHAR 523	Foundations I	1.5
PHAR 545	The U.S. Health Care System	2
PHAR 652	Health Promotion and Communication in Pharmacy Practice	2.5

Term Hours: 17.5

Spring

MEDC 553	Concepts in the Medicinal Chemistry of Therapeutics Agents ¹	1
PCEU 508	Pharmacokinetics	3
PCEU 509	Pharmaceutics and Biopharmaceutics II	3
PHAR 513	Contemporary Pharmacy Practice	2
PHAR 515	Continuous Professional Development I	1
PHAR 524	Foundations II	1.5
PHAR 526	Community Pharmacy Practice	2
PHAR 529	Clinical Therapeutics Module: Introduction to Special Populations ¹	2
PHAR 530	Introductory Pharmacy Practice Experience: Community Practice	4
PHTX 606	Introduction to Pharmacology of Therapeutic Agents ¹	1

Term Hours: 20.5

P2 year

Fall

PHAR 534	Foundations III	1.5
PHAR 541	Patient Assessment in Pharmacy Practice	2
PHAR 544	Clinical Therapeutics Module: Cardiovascular ¹	4.5
PHAR 546	Pharmacy-based Immunization Delivery ¹	1.5
PHAR 551	Pharmacy-based Point of Care Testing ¹	1.5

PHAR 555	Clinical Therapeutics Module: Endocrinology ¹	2.5
PHAR 565	Evidence-based Pharmacy II: Research Methods and Statistics ¹	2.5
PHAR 603	Clinical Therapeutics Module: Respiratory/Immunology ¹	2.5
PHAR 615	Continuous Professional Development II (continues)	1

Term Hours: 18.5

Spring

IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
MEDC 542	Biotechnology-derived Therapeutic Agents ¹	1
PCEU 615	Applied Pharmacokinetics	2.5
PHAR 532	Introductory Pharmacy Practice Experience: Hospital Practice	3
PHAR 535	Foundations IV	1.5
PHAR 566	Evidence-based Pharmacy III: Drug Literature Evaluation	2
PHAR 604	Clinical Therapeutics Module: Infectious Diseases ¹	4.5
PHAR 606	Clinical Therapeutics Module: Nephrology/Urology ¹	2
PHAR 615	Continuous Professional Development II	1

Term Hours: 18.5

P3 year

Fall

PHAR 540	Self-Care and Alternative and Complementary Treatments	2.5
PHAR 549	Personalized Medicine	1
PHAR 556	Clinical Therapeutics Module: Neurology ¹	4
PHAR 602	Clinical Therapeutics Module: Psychiatry ¹	3
PHAR 605	Clinical Therapeutics Module: Hematology/Oncology ¹	2.5
PHAR 640	Foundations V	1.5
PHAR 660	Community Pharmacy Practice Management II	1.5
PHAR 715	Continuous Professional Development III (continues)	1

Elective² 2-3

Term Hours: 18

Spring

PHAR 533	Introductory Pharmacy Practice Experience: Patient Care	0.5
PHAR 607	Clinical Therapeutics Module: Dermatology/EENT ¹	2
PHAR 618	Clinical Therapeutics Module: Gastrointestinal/Nutrition ¹	2.5
PHAR 619	Clinical Therapeutics Module: Women's Health/Bone ¹	2
PHAR 620	Clinical Therapeutics Module: Critical Care/Toxicology and Complex Patients ¹	2.5
PHAR 621	Pharmacoeconomics	2
PHAR 645	Foundations VI	1.5

PHAR 715	Continuous Professional Development III	1
PHAR 724	Pharmacy Law	2.5
Electives		2-3
Term Hours:		19.5
P4 year (over 45 weeks)		
IPEC 561	IPE Virtual Geriatric Case	2
PHAR 730	Continuous Professional Development IV	0.5
PHAR 760	Acute Care Pharmacy Practice I	5
PHAR 761	Advanced Hospital Pharmacy Practice	5
PHAR 763	Ambulatory Care Pharmacy Practice	5
PHAR 765	Elective I	5
PHAR 766	Elective II	5
PHAR 767	Clinical Selective I	5
PHAR 768	Advanced Community Pharmacy Practice	5
PHAR 773	Acute Care Pharmacy Practice II	5
Term Hours:		42.5
Total Hours:		155

1

Course will be taught as a module.

2

Students will complete five total credits of electives over the course of the year.

The minimum number of credit hours required for this degree is 155.

FIRST-PROFESSIONAL COURSES

School of Dentistry

Dental Biomedical Sciences (DEBS)

DEBS 501. Dental Gross Anatomy. 6.5 Hours.

Semester course; 4 lecture and 3 laboratory hours. 6.5 credits. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

DEBS 502. Dental Neuroanatomy. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Through this course, students will develop broad-level knowledge of neuroanatomical structures and principles and the role of the nervous system. Dental clinical correlations will be used to illustrate the future clinical necessity for and application of this scientific background.

DEBS 503. Infection and Immunology. 3.5 Hours.

Semester course; 3.5 lecture hours. 3.5 credits. Enrollment restricted to dental students in the first professional year; others admitted with permission of instructor. A course on the fundamentals of microbiology and immunology with aspects on disease and treatment of interest to dentistry.

DEBS 511. Microscopic Anatomy. 5 Hours.

Semester course; 2.5 lecture and 5.5 laboratory hours. 5 credits. A study of the normal tissues and organs of the human body at the microscopic level, with emphasis on the histological organization and development of the oral cavity.

DEBS 512. Physiology and Pathophysiology. 5 Hours.

Semester course; 5 lecture hours. 5 credits. A comprehensive study of the function of mammalian organ systems, designed primarily for dental students.

DEBS 513. Dental General Pathology. 6 Hours.

Semester course; 3 lecture and 6 laboratory hours. 6 credits. Instruction in the basic principles regarding alteration of structure and function in disease and in the pathogenesis and effect of disease in the various organ systems.

DEBS 601. Dental Pharmacology and Pain Control I. 4 Hours.

Yearlong course; 4 lecture hours. 4 credits. This course covers the study of the effects of chemical agents on the structure and function of living tissues, which may be normal or pathological. Provides a basic understanding of pharmacological principles and the basic concepts of currently accepted theories of pain mechanisms and provides a scientific basis for the use of therapeutic agents in order that the future dentist will be able to safely administer drugs to control pain by parenteral, oral or inhalation routes. Students receive CO grading in the fall and letter grade and earned credit in the spring.

DEBS 701. Dental Pharmacology and Pain Control II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: DEBS 601. The study of the effects of chemical agents on the structure and/or function of living tissues, which may be normal or pathological. Provides a basic understanding of pharmacological principles and the basic concepts of currently accepted theories of pain mechanisms and provides a scientific basis for the use of therapeutic agents in order that the future dentist will be able to safely administer drugs to control pain by parenteral, oral or inhalation routes.

Dental Special Topics (DENS)

DENS 503. Introduction to Behavioral Science in Dentistry. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Enrollment is restricted to students in a School of Dentistry degree program. Course consists of online lectures, discussion board activities, assigned readings and interactive activities centering on understanding health disparities and access to care issues as they relate to patient-centered care among diverse populations. Graded as pass/fail.

DENS 508. Dental Materials I. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. This is the first in a series of four courses that provide the scientific foundations for understanding the factors guiding the use of biomaterials in dentistry. The main objectives of this course are to provide the student with knowledge of the general nature and composition of dental materials; the relationship of dental materials with the oral structures; the physical, mechanical, chemical, biological and aesthetic properties of dental materials; and indications for and proper use of dental materials. Special emphasis will be on those materials used in operative dentistry. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 513. Foundations of Effective Interpersonal Skills During Patient Interactions I. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Enrollment is restricted to students in a School of Dentistry degree program. Course consists of online and face-to-face lectures, skill-building activities, student role-plays and a standardized patient assessment. Students will work both individually and in small groups for discussion and role-plays utilizing foundational motivational interviewing techniques. Graded as Pass/Fail.

DENS 515. Clinical Skills I. 1 Hour.

Semester course. 1 credit. Provides didactic information and practice opportunities to familiarize first-year dental students with patient management and selected clinical skills. The course runs concurrently with courses in periodontics and operative dentistry to provide the basis for initial entry into the dental clinic and patient care.

DENS 516. Clinical Skills II. 3.5 Hours.

Semester course; 2 lecture, 1 laboratory and 2 clinical hours (weekly). 3.5 credits. Prerequisite: DENS 515. Enrollment is restricted to admitted dental students. The second in a two-part series of courses designed to prepare dental students for entry into the clinical training environment. Students' learning experiences include didactic lectures, clinical practice and observation, and simple patient-based interactions and/or procedures performed while assisting more senior dental students.

DENS 522. Preclinical Restorative Lecture I. 4 Hours.

Yearlong course; 4 lecture hours (2 lecture credits each semester). 4 credits. This is the first in a three-course preclinical didactic series on restorative dentistry including operative dentistry and fixed prosthodontics. This two-semester didactic course is paired with a two-semester laboratory course. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with noninvasive as well as invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 523. Preclinical Restorative Lab I. 4.5 Hours.

Yearlong course; 7 laboratory hours. 4.5 credits. This is the first in a three course pre-clinical laboratory series on restorative dentistry including operative dentistry and fixed prosthodontics. This two-semester course consists of laboratory exercises, including conventional mannequin simulation sessions, and is paired with a two-semester lecture course. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with noninvasive as well as invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 524. Evidence-based Dentistry and Critical Thinking I. 1 Hour.

1 credit. The fundamentals of evidence-based dentistry will be taught. Students will gain the ability to identify, retrieve and critically appraise dental literature.

DENS 532. Preclinical Restorative Lecture II. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. This is the second in a three-course preclinical didactic series on restorative dentistry including operative dentistry and fixed prosthodontics. This one-semester didactic course is paired with a one-semester laboratory course. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with noninvasive as well as invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form.

DENS 533. Preclinical Restorative Lab II. 1.5 Hour.

Semester course; 4.5 laboratory hours. 1.5 credits. This is the second in a three-course preclinical laboratory series on restorative dentistry including operative dentistry and fixed prosthodontics. This one-semester course consists of laboratory exercises, including conventional mannequin simulation sessions, and is paired with a one-semester lecture course. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with noninvasive as well as invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form.

DENS 550. Update in Practice Administration. 1 Hour.

Semester course; 15 seminar hours. 1 credit. Lectures and seminar discussion on the business aspects of contemporary specialty dental practice, with emphasis on entry into practice, associateship contracts, financing arrangements, risk management and employee relations.

DENS 580. Biostatistics and Research Design in Dentistry. 2 Hours.

Semester course; 30 seminar hours. 2 credits. Must be taken for two consecutive semesters. Provides the advanced education student in dentistry an appreciation for the need for and uses of fundamental biostatistical methods in dental applications. Appropriate research designs for answering research questions of importance in dentistry will be examined. An array of biostatistical methods that are commonly used in the dental literature and by agencies such as the FDA to evaluate new dental products and methodologies are discussed.

DENS 591. Dental Special Topics I. 1-12 Hours.

Semester course; 1-12 lecture hours. 1-12 credits. May be repeated with different topics for a maximum of 24 credits. Explores specific topics in dentistry.

DENS 603. Foundations of Effective Interpersonal Skills During Patient Interactions II. 2 Hours.

Yearlong course; 2 lecture hours. 2 credits. The two-semester course consists of online and face-to-face lectures, skill-building activities, student role-plays and a standardized patient assessment (spring). Students will work both individually and in small groups for discussion and role-plays of cases utilizing foundational motivational interviewing techniques. Students receive CO grading in the fall semester and a Pass/Fail grade upon completion.

DENS 604. Introduction to Oral Research. 0.5 Hours.

Semester course; .5 lecture hours. .5 credits. Enrollment is restricted to any dental student with a minimum GPA of 3.0 and in good academic standing. This course introduces students to oral research. Students will learn about different types of research and explore their personal research interests. Assignments will introduce students to experimental design and presenting research. Graded as pass/fail.

DENS 605. Writing an A.D. Williams Research Fellowship. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to dental students with a minimum GPA of 3.0 and in good academic standing. Students will be introduced to writing a fellowship proposal. Lectures and workshops will guide students through the process of applying for an A.D. Williams fellowship. Students will also begin their independent research. Graded as pass/fail.

DENS 606. Oral Research: Independent Study. 0.5-2 Hours.

Semester course; 1.5-6 research hours. .5-2 credits (3 research hours per credit). May be repeated for a maximum total of 16 credits. Prerequisite: DENS 605 or permission of instructor. Enrollment is restricted to dental students with a minimum GPA of 3.0 and in good academic standing. Independent study and individual research experiences will be conducted under the guidance of a research mentor. Graded as pass/fail.

DENS 607. D2 Clinical Dentistry I. 1 Hour.

Semester course; 3 clinical hours. 1 credit. This course begins the transition of the second-year dental student to clinical patient care of their family of patients. Students will engage in weekly patient care through chairside assisting of their D3 or D4 vertical buddy. Graded as pass/fail.

DENS 608. Dental Materials II. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. The second in a series of four courses. These courses provide the scientific foundations for understanding the factors guiding the use of biomaterials in dentistry. The main objectives of this course are to provide the student with knowledge of the general nature and composition of dental materials; the relationship of dental materials with the oral structures; the physical, mechanical, chemical, biological and aesthetic properties of dental materials; and indications for and proper use of dental materials. Special emphasis will be on those materials used in prosthodontic dentistry. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 610. Fundamentals of Oral and Maxillofacial Radiology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course will introduce students to the principles, theory and techniques of diagnostic imaging.

DENS 611. Introduction to Professionalism, Ethics and Ethical Decision-making. 1 Hour.

Semester course; 1 credit. Provides a review of the foundation of ethical principles, concepts of professionalism, professional student behavior and responsibilities, ethical issues guiding dentistry, and the development of an ethical decision-making model.

DENS 617. D2 Clinical Dentistry II. 2 Hours.

Semester course; 6 clinical hours. 2 credits. This course continues the transition of the second-year dental student to clinical patient care of their family of patients. Students will engage in weekly patient care through chairside assisting of their D3 or D4 vertical buddy. Graded as pass/fail.

DENS 619. Evidence-based Dentistry and Critical Thinking II. 1 Hour.

1 credit. The fundamentals of evidence-based dentistry will be taught. Students will gain the ability to identify, retrieve and critically appraise dental literature.

DENS 621. Dental Occlusion. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Consists of lectures which expand on the basic concepts that were presented in the fundamentals of occlusion course. Focuses on the examination, diagnosis and treatment planning of various occlusal problems. The student will learn the skills needed to analyze the dental occlusion of patients and to plan successful occlusal therapy, including restorative procedures and fixed prosthodontics treatment.

DENS 622. Dental Occlusion Lab. 1.5 Hour.

Semester course; 4 laboratory hours. 1.5 credits. Consists of labs which expand on the basic concepts that were presented in the fundamentals of occlusion course. Focuses on the examination, diagnosis and treatment planning of various occlusal problems. The student will learn the skills needed to analyze the dental occlusion of patients and to plan successful occlusal therapy, including restorative procedures and fixed prosthodontics treatment. Graded as pass/fail.

DENS 627. D2 Clinical Dentistry III. 6.5 Hours.

Semester course; 9 clinic hours. 6.5 credits. This course serves as the start of the clinic-intensive portion of the D.D.S. program. Students will be assigned their own panel of patients for whom they will be responsible for management, diagnosis, treatment planning, clinical care and care coordination for the duration of dental school until graduation. Students will also rotate through specialty area clinics for the care of their own patients and other patients receiving care in the clinics. This is a multidisciplinary course incorporating clinics within each department in the School of Dentistry. Graded as pass/fail.

DENS 628. Introduction to Dental Public Health. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course will introduce dental students to issues related to the role of the dental professional at a local and state level, including dental public health, health equity, health literacy, oral health disparities, the role of publicly funded dental programs and the dental safety net.

DENS 630. Orthodontic-Periodontic-AEGD Conference. 0.5 Hours.

Semester course; 8 seminar hours. 1 credit. Must be taken every semester of the program. Discusses treatment planning and analysis of patients requiring combined orthodontic, periodontic and restorative care. Presents topics of interest to orthodontists, periodontists and general dentists. Graded S/U/F.

DENS 632. Preclinical Restorative Lecture III. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This is the third in a three-course preclinical didactic series on restorative dentistry including operative dentistry and fixed prosthodontics. This one-semester didactic course is paired with a one-semester laboratory course. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form.

DENS 633. Preclinical Restorative Lab III. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. This is the third in a three-course preclinical laboratory series on restorative dentistry including operative dentistry and fixed prosthodontics. This one-semester course consists of laboratory exercises, including conventional mannequin simulation sessions, and is paired with a one semester-lecture course. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form.

DENS 642. Fundamentals of Treatment Planning. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Open only to second-year D.D.S. students. Designed to build upon the student's prior exposure to discipline-based treatment planning concepts. Students will develop an integrated, multidisciplinary approach to urgent and oral disease control phase patient treatment planning. The course will also cover the use of information technology applications to document treatment plans and strategies for effectively communicating treatment plans to patients. Graded P/F.

DENS 651. Preclinical General Practice Dentistry Lab. 5 Hours.

Semester course; 200 laboratory hours. 5 credits. Admission into VCU International Dentist Program required. Designed to prepare and transition a class of internationally trained dentists into the third year of dental school at VCU. All aspects of preclinical dentistry will be covered in this basic preparatory laboratory course. Graded P/F.

DENS 652. Preclinical General Practice Dentistry Lecture. 9 Hours.

Semester course; 144 lecture hours. 9 credits. Admission into VCU International Dentist Program required. Designed to prepare and transition a class of internationally trained dentists into the third year of dental school at VCU. All aspects of preclinical dentistry will be covered in this basic preparatory lecture course. Graded P/F.

DENS 653. Clinical General Practice Dentistry Lecture. 6 Hours.

Semester course; 96 lecture hours. 6 credits. Admission into VCU International Dentist Program required. Comprises clinical experiences prior to the third year of professional study. This course is designed to enhance the student's clinical experience in patient management, treatment planning, utilization of dental auxiliaries, consultation with other health care professionals and referral to appropriate dental specialists. Specialty subjects and techniques will be combined to form a general dentistry model for patient care. Guidance from faculty will encourage the student to synthesize and integrate materials, methods and techniques from previous courses into a logical and systematic approach to the delivery of oral health care. Small-group seminars will be provided to enhance the student's transition to dental health care at VCU. Graded P/F.

DENS 654. Clinical General Practice Dentistry Lab. 5 Hours.

Semester course; 200 laboratory hours. 5 credits. Enrollment requires admission into the VCU International Dentist Program. Prerequisite: DENS 652. Comprises clinical experiences prior to the third year of professional study. This course is designed to enhance the student's clinical experience in patient management, treatment planning, utilization of dental auxiliaries, consultation with other health care professionals and referral to appropriate dental specialists. Specialty subjects and techniques will be combined to form a general dentistry model for patient care. Guidance from faculty will encourage the student to synthesize and integrate materials, methods and techniques from previous courses into a logical and systematic approach to the delivery of oral health care. Small-group seminars will be provided to enhance the student's transition to dental health care at VCU. Graded pass/fail.

DENS 655. Preclinical General Practice Dentistry for Internationally Trained Dentists. 6 Hours.

Yearlong course; 6 lecture hours. 6 credits. Designed to support the integration of a class of internationally trained dentists into the second year at the VCU School of Dentistry, this course addresses special topics of concern for this cohort. The course will cover core didactic material and laboratory activities and will strengthen areas that have been previously identified as opportunities for growth in this student population. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

DENS 660. Interdisciplinary Care Conference. 0.5 Hours.

Continuing course; 7 hours. 1 credit. Must be taken every year of the program. Provides a forum for formal presentation and group discussion of the diagnosis, treatment planning, delivery and prognosis of interdisciplinary dental care. Designed for continuing enrollment for two academic semesters; graded CO in the fall and a final grade of Pass or Fail in the spring.

DENS 662. Advanced Restorative and Digital Dentistry Lecture. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Extensive didactic instruction and laboratory simulation experience is provided in different restorative techniques with focused education on digital dentistry. Experience is also provided concerning CAD/CAM techniques, CAD/CAM materials, esthetic dentistry and intraoral photography. This course is constructed in a way that simulates dental CE courses and is paired with a laboratory course.

DENS 663. Advanced Restorative and Digital Dentistry Lab. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. This course consists of laboratory exercises using conventional mannequin simulation, modern dental materials/equipment and digital dentistry technologies. Extensive laboratory simulation experience is provided in different restorative techniques with focus on digital dentistry. Experience is also provided concerning CAD/CAM techniques, CAD/CAM materials, esthetic dentistry and intraoral photography. The course is constructed in a way that simulates dental CE courses and is paired with a didactic course. Graded as pass/fail.

DENS 680. Graduate Dental Clinic. 4 Hours.

Semester course; 12 clinic hours. 4 credits. May be repeated for credit. Enrollment is restricted to students enrolled in the M.S.D. program. This course provides supervised experiences in advanced clinical skills. Students will enhance their skills in diagnosis and treatment planning, patient communication, professional and ethical care, and collaboration with other health care providers. Sections of the course will address specialty-specific treatments. Graded as pass/fail.

DENS 691. Dental Special Topics II. 1-12 Hours.

Semester course; 1-12 lecture hours. 1-12 credits. May be repeated with different topics for a maximum of 24 credits. Explores specific topics in dentistry.

DENS 699. Thesis Guidance. 1-2 Hours.

Semester course; 18-36 seminar hours. 1-2 credits. Must be taken every semester of the program. The graduate student selects a research project topic, conducts the necessary background literature review, develops a protocol, obtains the necessary materials, instruments and human/animal use approvals as necessary, collects and analyzes the data, presents the findings in the form of a master's thesis, and prepares a manuscript for publication.

DENS 700. Basic Sciences and Graduate Dentistry. 3 Hours.

First year; spring course; 45 hours. 3 credits. Advanced level survey of topic areas related to the principles and practices of dentistry including: oral pathology, biochemistry and physiology, infection and immunity, pharmacology, biomaterials and genetics.

DENS 701. Remediation in Dentistry. 1-7 Hours.

Semester course; variable contact hours. Variable credits. This course is not part of the core D.D.S. curriculum. Students who must remediate a course, for any reason, will be enrolled in this course during their remediation period and credit hours will be assigned consistent with the course being remediated. A grade of pass/fail will be assigned at the completion of the remediation period.

DENS 702. Dental Clinics. 1-12 Hours.

Semester course; variable hours, clinical contact. 1-12 credits. May be repeated for credits. Restricted to students enrolled in D.D.S. program. This course is designed for students who need to remediate clinical experiences, make up clinical experiences or are off cycle with clinical work for any other reason. Credit hours, learning objectives and exact expectations/responsibilities will be identified in an individualized education plan for each student as determined by the school's deans for clinical education and academic affairs. Graded pass/fail.

DENS 704. Academic Dental Career Exploration Elective. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Exact contact hours will vary by student and their self-designed learning plan. Enrollment restricted to students in the D.D.S. program with permission of the course director. This is an elective course for D2, D3 or D4 dental students who are interested in learning more about academic dental teaching and/or research careers. The course matches each student with a faculty mentor who provides insight into the day-to-day life of an educator or researcher. This elective is modeled on the ADEA Academic Dental Careers Fellowship Program. Graded as Pass/Fail.

DENS 705. CAD/CAM Senior Selective. 1 Hour.

Yearlong course; 1.5 clinic hours. 1 credit. Clinic time may be weekly, in block rotation or variable schedule. This is a yearlong selective course with focused education on digital dentistry. Experience is also provided concerning CAD/CAM techniques, CAD/CAM materials and intra-oral photography. This course is constructed in a way that simulates dental CE courses. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

DENS 706. Laser Senior Selective. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. This elective course is offered to dental students who demonstrate high academic achievement and are interested in expanding their practical knowledge and experience in laser applications in dentistry. The goal of this course is to provide dental students opportunities for the integration and application of theoretical, evidence-based and clinical knowledge to the individual's practice of laser dentistry in a controlled, student-centered environment. This course is aimed to provide additional discipline-specific treatment experiences and expand upon previously learned ethical and patient management skills. The course will enhance the general dentist's knowledge regarding applications of various lasers for dental procedures and to provide hands-on simulation experience in applying techniques and procedures suitable for judicious use in general dental practice. The course consists of didactic components, small-group seminars, model-based simulations and clinical assisting. Upon completion of this course, students will have a scientific and clinical basis for understanding various dental lasers and their applications for dental and surgical procedures. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

DENS 707. Dental Sleep Medicine Senior Selective. 1 Hour.

Yearlong course; .5 lecture and 1 clinical hours. 1 credit. The course is delivered in 16 sessions over two semesters. This course provides exposure to the discipline of dental sleep medicine and will introduce students to sleep and how it relates to dental sleep medicine. Students will also be introduced to the treatment of obstructive sleep apnea, including hands-on fabrication of appliances and delivery. This select course will also present to the students side effects, how to manage them and follow-up care for oral appliance therapy for OSA. The goal of this course is to have the students obtain knowledge in the scope of dental sleep medicine and to encourage further training if they want to implement this in future practice. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

DENS 708. Dental Materials III. 0.5 Hours.

Yearlong course; 0.5 lecture hours. 0.5 credits. The third in a series of four courses. These courses provide the scientific foundations for understanding the factors guiding the use of biomaterials in dentistry. The main objectives of this course are to provide the student with knowledge of 1) the general nature and composition of dental materials; the relationship of dental materials with the oral structures; the physical, mechanical, chemical, biological and aesthetic properties of dental materials; and indications for and proper use of dental materials. Special emphasis will be on applying dental materials knowledge to clinical practice. Student-led seminars will be adopted, wherein students will be divided into groups and a specific topic will be assigned to each group. These kinds of seminars will improve the students in terms of critical-thinking, working in teams and presentation skills. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 718. Dental Materials IV. 0.5 Hours.

Yearlong course; 0.5 lecture hours. 0.5 credits. The fourth in a series of four courses. These courses provide the scientific foundations for understanding the factors guiding the use of biomaterials in dentistry. The main objectives of this course are to provide the student with knowledge of the general nature and composition of dental materials; the relationship of dental materials with the oral structures; the physical, mechanical, chemical, biological and aesthetic properties of dental materials; and indications for and proper use of dental materials. Special emphasis will be on applying dental materials knowledge to clinical practice and helping students to make independent decisions on materials choice in clinical dentistry, thus preparing them for life after dental school. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

DENS 727. D3 Clinical Dentistry. 8 Hours.

Semester course; 24 clinic hours. 8 credits. Clinic time may be weekly, in block rotation or variable schedule. This course serves as a continuation of the clinic-intensive portion of the D.D.S. degree program. Students will continue to treat their own panel of patients for whom they are responsible for management, diagnosis, treatment planning, clinical care and care coordination for the duration of dental school until graduation. Students will also rotate through clinical specialty area clinics for the care of their own patients and other patients receiving care in the specialty clinics. Off-site clinical experiences also begin during this semester. This is a multidisciplinary course incorporating clinics within each department in the School of Dentistry as well as external clinic rotation sites. Graded as pass/fail.

DENS 730. Dental Practice Management III. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course is part of a series. The series will prepare the dental graduate for making decisions about the type of practice to pursue, planning to establish or purchase a practice and, ultimately, managing it once in operation. Topics covered are those appropriate to the third-year dental student and may include, but are not limited to, marketing a practice, selecting the right location, ergonomics and managing the dental office. Graded as Pass/Fail.

DENS 735. Patient Management and Professional Conduct I. 5 Hours.

Yearlong course; 5 clinical hours. 5 credits. Designed for third-year dental students to understand and practice the concepts of ethical conduct, patient management, risk management and professional responsibility. This course is based upon the application of the VCU School of Dentistry Code of Professional Conduct, the ADA Principles of Ethics and Code of Professional Conduct, and the School of Dentistry's Patient Bill of Rights in the clinical setting and is designed to help the dental student strive to do what is right for their patients, now and into the future. Course graded as CO with no credit for fall semester; pass/fail grade and credit assigned for spring semester.

DENS 740. Dental Practice Management IV. 1 Hour.

Semester course; 1 credit. The fourth in a series of four courses required over the duration of the four-year DDS curriculum. The series will prepare the dental graduate for making decisions about the type of practice to pursue, planning to establish or purchase a practice and, ultimately, managing it once in operation. Topics covered are those appropriate to the senior dental student and may include, but are not limited to, writing a business plan and understanding the current economy and its impact on dental practice. Graded as P/F.

DENS 745. Patient Management and Professional Conduct II. 5 Hours.
Yearlong course; 5 clinical hours. 5 credits. Designed for fourth-year dental students to understand and practice the concepts of ethical conduct, patient management, risk management and professional responsibility. This course is based upon the application of the VCU School of Dentistry Code of Professional Conduct, the ADA Principles of Ethics and Code of Professional Conduct, and the School of Dentistry's Patient Bill of Rights in the clinical setting and is designed to help the dental student strive to do what is right for their patients, now and into the future. Course graded as CO with no credit for fall semester; pass/fail grade and credit assigned for spring semester.

DENS 752. Clinical General Practice Dentistry. 13 Hours.
Yearlong course; 19.5 clinic hours. 13 credits. Clinic time may be weekly, in block rotation or variable schedule. Enrollment is restricted to fourth-year dental students. Course encompasses all clinical patient care instruction within the School of Dentistry group practices. This course is designed to enhance the student's clinical experience in patient management, treatment planning, utilization of dental auxiliaries, consultation with other health care professionals and referral to appropriate dental specialists. Students receive CO grading in the fall and a letter grade and earned credit in the spring.

DENS 753. D4 Treatment Planning Seminar. 1 Hour.
Yearlong course; 1 lecture hour. 1 credit. This course is the capstone treatment planning experience within the D.D.S. curriculum. Students will independently develop and apply a five-phase treatment planning approach to a clinical patient while providing sound justification for diagnoses and treatment planning decisions. Active patients of record will serve as clinical case studies. This course renders a CO in the fall semester and a letter grade in spring.

DENS 762. Clinical Service-learning. 4 Hours.
Yearlong course; 6 clinic hours. 4 credits. Clinic time may be weekly, in block rotation or variable schedule. A course-based, credit-bearing educational experience in which students participate in an organized service activity that meets community-identified needs. During the course, students are assigned rotations in clinical practice settings in underserved areas. In these settings, students 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. Students have the opportunity to make oral health care more accessible to marginalized groups while continuing clinical education. 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. Course graded as CO with no credit for fall semester; letter grade and credit assigned for spring semester.

DENS 770. Community Dental Health/Dental Public Health. 1 Hour.
Semester course; 1 lecture hour. 1 credit. This course presents a series of seminar sessions for students to gain exposure to public health and advocacy learning experiences. It is designed to effect a fundamental transformation in the approach to the practice of oral health care with the understanding of social determinants of health. Graded as pass/fail.

DENS 780. Functional Occlusion: From TMJ to Smile Design Selective. 1.5 Hour.
Yearlong course; 1 lecture and 1 laboratory hour. 1.5 credits. Enrollment restricted to selected D4 dental students and AEGD residents. The course consists of lectures and clinic/laboratory components, which expand on the basic concepts that were presented in core D.D.S. curriculum. Students receive CO grading in the fall and Pass/Fail grade and earned credit in the spring.

DENS 790. Selective: Applications of 3-D Printing in Dentistry. 1 Hour.
Yearlong course; 1 lecture and .5 clinic hours. 1 credit. Enrollment is restricted to students admitted to D.D.S. program and selected by course faculty. The course has three components: 1) an online self-learning module on basic principles of 3-D printing and its applications in biological science and health science, as well as principle and workflow for implant-guided surgery, 2) a workshop on implant treatment planning using commercially available software and 3-D printing of models and surgical guide and 3) a patient-based observation experience in implant-guided surgery. The course is designed for students to use the most up-to-date digital technology to diagnose and treat real clinical cases. Students receive CO grading in the fall and pass/fail grade and credit are awarded in spring.

DENS 791. Dental Special Topics III. 1-12 Hours.
Semester course; 1-12 lecture hours. 1-12 credits. May be repeated with different topics for a maximum of 24 credits. Explores specific topics in dentistry.

Endodontics (ENDO)

ENDO 522. Introduction: Specialty of Endodontics. 2 Hours.
Semester course; 96 laboratory hours. 2 credits. Restricted to first-year students. Utilizes laboratory exercises to review basic concepts and introduce the more complex technical procedures required to practice the clinical specialty of endodontics.

ENDO 530. Advanced Oral Pathology. 1 Hour.
Semester course; 13 seminar hours. 1 credit. Provides through a series of seminars, an in-depth knowledge of those specific areas of oral pathology that apply to endodontics.

ENDO 532. Management of Medical Emergencies in the Dental Office. 1 Hour.
Semester course; 20 seminar hours. 1 credit. Provides through a series of seminars, an in-depth level of knowledge in the management of medical emergencies in the dental office.

ENDO 560. Endodontic Therapy Lectures. 3.5 Hours.
Semester course; 58 lecture hours. 3.5 credits. Restricted to first-year students. Presents a series of lectures on clinical endodontic topics in order to familiarize the students with clinical endodontic procedures either in conjunction with or prior to the "Endodontic Topic Literature Reviews" on these specific clinical topics.

ENDO 622. Principles of Endodontics. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Covers the basic principles of endodontics in preparation for clinical endodontics.

ENDO 623. Principles of Endodontics Lab. 1.5 Hour.
Semester course; 4 laboratory hours. 1.5 credits. This lab course teaches the basic technical skills of endodontics in preparation for clinical endodontics.

ENDO 650. Endodontic Topic Literature Review. 3.5 Hours.
Semester course; 58 seminar hours. 3.5 credits. May be repeated for credit. Must be taken every semester of the program. Reviews topic literature pertaining to the scientific basis for endodontic procedures and the materials and techniques utilized in the clinical practice of endodontics. Discusses content of the reviewed literature and critically evaluates by means of abstracts and study questions.

ENDO 652. Endodontic Clinical Seminars. 1.5 Hour.

Semester course; 28 seminar hours. 1.5 credits. May be repeated for credit. Must be taken every semester of the program. Requires students to present a seminar once each month in which difficult diagnostic cases, patient management problems and complex treatment cases are critiqued and treatment options discussed.

ENDO 654. Endodontic Management of the Medically Compromised Patient. 1 Hour.

Semester course; 14 seminar hours. 1 credit. Must be taken for two consecutive semesters. Provides students, through a seminar series, with an in-depth level of knowledge in the endodontic management of the medically compromised patient.

ENDO 656. Endodontic Current Literature Review. 1 Hour.

Semester course; 18 seminar hours. 1 credit. Must be taken every semester of the program. Provides a review of current journal literature that pertains to the scientific basis for endodontic procedures, materials and techniques currently being used in the clinical practice of endodontics. Discusses and critically evaluates the content of the reviewed literature. Requires written abstracts of all reviewed articles.

ENDO 680. Clinical Endodontics. 1-12 Hours.

Semester course; 3-36 clinic hours. 1-12 credits. May be repeated for credit. Prerequisite: ENDO 522. Enrollment is restricted to students in the M.S.D. program. This course provides clinical training in diagnosis, treatment and outcome assessment for all aspects of endodontics with an emphasis on non-surgical, retreatment and surgical endodontics. Must be taken both fall and spring of the first and second years of the program for a total of four credits. May be taken without credit in additional semesters as needed to complete clinical training.

ENDO 700. Senior Selective in Advanced Clinical Endodontics. 1 Hour.

Yearlong course; 1.5 clinic hours. 1 credit. Clinic time may be weekly, in block rotation or variable schedule. This course is designed to enhance the student's clinical experience in the field of endodontics, to include patient management, treatment planning, endodontic treatment modalities, consultation with other health care professionals and referral to appropriate dental specialists. Emphasis is placed on the management of common and advanced clinical endodontic problems that may be encountered in the general practice of dentistry. Guidance from faculty will encourage the student to synthesize and integrate techniques taught in previous endodontic courses and labs into a logical and systematic approach to the delivery of quality endodontic care to the patients. This is a yearlong clinical course designed to develop advanced skills in treating non-surgical endodontic cases. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

ENDO 731. Endodontic Therapy. 1 Hour.

Semester course; 1 lecture contact hour. 1 credit. An application course designed for the student to gain experience and demonstrate proficiency in the application of clinical endodontic knowledge to the diagnosis and management of complex clinical endodontic problems. Emphasis is placed on differential diagnosis and management of clinical endodontic problems. This course builds on the principles of diagnosis and treatment of disease of the pulp and periradicular tissues and injuries of the dental pulp. This course continues to place emphasis on the prevention of disease and maintenance of the normal pulpodentin complex.

ENDO 739. Clinical Endodontics III. 1.5 Hour.

Yearlong clinical course. 1.5 credits. Designed to develop clinical skills and provide experience in the diagnosis, treatment planning, treatment, prognosis, follow-up care and clinical patient management in cases involving the pulp and periradicular tissues. Emphasis is placed on the management of common clinical problems that may be encountered in the general practice of dentistry. This course emphasizes and elaborates on the rationale and treatment techniques presented in the D-2 didactic and laboratory course.

ENDO 749. Clinical Endodontics IV. 1.5 Hour.

Yearlong course; 2 clinic hours. 1.5 credits. Clinic time may be weekly, in block rotation or variable schedule. This course is designed to enhance the student's clinical experience in the field of endodontics, to include patient management, treatment planning, endodontic treatment modalities, consultation with other health care professionals and referral to appropriate dental specialists. Emphasis is placed on the management of common clinical endodontic problems that may be encountered in the general practice of dentistry. The course will run the fall and spring semester of the dental student's fourth year. Guidance from faculty will encourage the student to synthesize and integrate techniques taught in previous endodontic courses and labs into a logical and systematic approach to the delivery of quality endodontic care to the patients. Students receive CO grading in the fall and a letter grade and earned credit in the spring.

General Practice (GENP)**GENP 511. Dental Anatomy. 2.5 Hours.**

Semester course; 2.5 lecture hours. 2.5 credits. A lecture course designed to develop the student's knowledge of the morphology and anatomical features of the human adult dentition.

GENP 512. Operative Dentistry Lecture. 4 Hours.

Yearlong course; 67 lecture contact hours. 4 credits. Paired with GENP 513, the courses consist of lectures and laboratory exercises, including both virtual reality-based training and conventional mannequin simulation sessions. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with both non-invasive and invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form. Students receive a grade of CO for fall, with a grade and all credit hours earned in spring.

GENP 513. Operative Dentistry Laboratory. 4.5 Hours.

Yearlong course; 213 laboratory contact hours. 4.5 credits. Paired with GENP 512, the courses consist of lectures and laboratory exercises, including both virtual reality-based training and conventional mannequin simulation sessions. Information is presented regarding caries as a disease process, and students are presented with the knowledge and develop the skills necessary to treat the disease with both non-invasive and invasive operative treatment techniques. Extensive didactic instruction and laboratory simulation experience is provided in tooth preparation and restoration. Experience is also provided concerning properties, chemistry and manipulation of the various direct dental restorative materials used to restore teeth to their correct anatomical and functional form. Students receive a grade of CO for fall, with a grade and all credit hours earned in spring.

GENP 514. Fundamentals of Occlusion. 2 Hours.

Semester course; 1 lecture and 3 laboratory contact hours. 2.0 credits. Covers theories of occlusion, foundational concepts and fundamental lab skills essential for developing an understanding of occlusion. Through this course students begin to develop their working understanding of the concept of occlusion.

GENP 521. Dental Anatomy Lab. 1.5 Hour.

Semester course; 4.5 laboratory hours. 1.5 credits. A laboratory course designed to develop the student's knowledge of the morphology and anatomical features of the human adult dentition.

GENP 552. Emergency Clinic. 1 Hour.

Semester course; clinical hours. 1 credit. Part of the AEGD curriculum, students must enroll in this course for two consecutive semesters for a total of 2 credits. Students learn how to identify and manage emergency care needs of patients during evening and weekend hours when VCU dental practices are closed.

GENP 558. General Dentistry Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Part of the AEGD curriculum, students must enroll in this course for two consecutive semesters for a total of 2 credits. Students will participate in discussions of resident patient cases and relative current literature.

GENP 566. Specialty Lecture Seminar Series. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Part of the AEGD curriculum, students must enroll in this course for two consecutive semesters for a total of 2 credits. Covers a range of dental interdisciplinary topics and is designed to develop advanced critical thinking skills in AEGD residents.

GENP 580. AEGD Clinic. 1-6 Hours.

Semester course; clinical hours. 6 credits. Part of the AEGD curriculum, students must enroll in this course for two consecutive semesters for a total of 12 credits. Provides the core clinical patient care experience for residents in the Advanced Education in General Dentistry residency program.

GENP 590. Advanced AEGD Clinic. 6 Hours.

Semester course; 18 clinical hours. 6 credits. This is a clinical study and experiential course in advanced general dentistry designed to prepare the second-year residents of the AEGD program for the practice of dentistry at a higher level than that achieved during the first-year resident course of study. It is expected that the resident will evaluate each patient's general and oral health needs, provide professional dental care and refer the patient, when indicated, to dental specialists or other appropriate health care providers while maintaining a strong continuity of care. The AEGD resident will develop professionally not only in the clinical aspect, but in the ability to think critically. AEGD students must enroll in this course for two consecutive semesters for a total of 12 credits. Graded as pass/fail.

GENP 620. Cariology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Designed to help students understand major aspects of cariology, which include the process of dental caries, diagnosis and detection, prevention and treatment, and clinical application.

GENP 700. Selective in Aesthetic Dentistry. 1 Hour.

Semester course; 16 seminar contact hours. 1 credit. Prerequisites: D4 standing and selection by course faculty. This course is designed to give the tools in understanding proper diagnosis, treatment planning and approaches in execution of the proposed treatment plan of more advanced multidisciplinary cases. Graded as pass/fail.

GENP 739. Clinical Operative III. 5 Hours.

Yearlong course; clinical contact hours. 5 credits. Will introduce dental students to the basic skills required for an entry-level general practitioner. This is a practical, hands-on two-semester clinical skill-development course where students learn to develop treatment plans for oral disease control in patients, restore teeth to form and function, manage emergency patients and manage an efficient recall system.

GENP 742. Treatment Planning Seminar. 2 Hours.

Semester course; 4 seminar hours. 2 credits. Designed to assist each D-3 student in the continual development of their treatment planning skills in particular and critical-thinking skills in general. The treatment planning seminar utilizes faculty-facilitated, case-based and problem-solving teaching strategies to provide each student with the opportunity to gain experience in developing and discussing treatment plans for both simulated and current clinical comprehensive care patients. The course will build on and solidify the concepts of diagnosis and treatment planning taught in the various D-1, D-2 and D-3 courses as well as augment student clinical experiences to date.

Oral Diagnostic Sciences (ORPT)**ORPT 540. Clinical Pathology Conference. 1 Hour.**

Semester course; seminar hours. 1 credit. Through this course, students develop advanced skills in the diagnosis and treatment of common oral pathologic findings.

ORPT 620. Oral Radiology I. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to students in the D.D.S. program. Oral and maxillofacial radiology is the specialized area of dentistry that deals with use of radiant energy for diagnosis of diseases and conditions affecting the head and neck. Through a series of lectures and laboratories, the course will introduce students to the basic physics of X-radiation, its biological effects on living systems, characteristics of radiographic images and fundamentals of intraoral and panoramic radiography in dentistry.

ORPT 621. Dental Radiology. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Designed to provide the predoctoral dental student with an introduction to the theory, principles and techniques of diagnostic imaging and lay the groundwork for future studies in diagnostic interpretation.

ORPT 622. Oral Pathology. 3 Hours.

Yearlong course; 3 lecture hours. 3 credits. A problem-solving/critical-thinking experience emphasizing the more common oral abnormalities. The soft tissue and osseous pathologic entities will be discussed individually as well as within differential diagnosis cluster. By the end of the course the student should, when presented with an abnormality, be able to establish a differential diagnosis, discuss the salient features and present a logical sequential approach to discovering the final diagnosis and management.

ORPT 623. Temporomandibular Disorders and Orofacial Pain. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Dentistry is one of the primary health care professions that is involved in evaluation, diagnosis, prevention and management of temporomandibular disorders. This course is designed to provide an overview of TMDs as a syndrome.

ORPT 700. Oral Diagnostic Sciences Radiology Senior Selective. 1 Hour.

Yearlong course; 1.5 laboratory hours. 1 credit. Radiology lab time may be weekly, in block rotation or variable schedule. Enrollment is restricted to students with D4 class status and who are selected to participate. This selective will allow the student to experience a variety of activities in oral and maxillofacial radiology. The course will be of particular value to those interested in practicing general dentistry, in particular utilizing the applications of CBCT imaging in diagnosis, treatment planning and digital dentistry. The course will also introduce modern practice of oral and maxillofacial radiology and new trends in dental teleradiology. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

ORPT 701. D4 Selective in Forensic Dentistry. 1 Hour.

Semester course; .5 lecture and 1.5 clinical hours. 1 credit. Enrollment restricted to students in the D.D.S. program as selected by the course director. This course will give selected students with an interest in expanding beyond the normal curriculum the opportunity to experience a variety of dental forensic activities, including working with the chief medical examiner's office in Richmond in the proper identification of unidentified bodies. Graded as Pass/Fail.

ORPT 702. Oral Diagnostic Sciences Orofacial Senior Selective. 1.5 Hour.

Yearlong course; 1.5 clinical hours (80 total). 1.5 credits. Enrollment is restricted to students with D4 class status and who are selected to participate. This selective will allow the student to experience a variety of activities in orofacial pain. Students will develop the skills to take detailed patient histories, create thoughtful differential diagnoses, critically evaluate conditions, write prescriptions and interact with other health care providers. By the end of the course, students will be proficient in recognizing and managing conditions such as TMD and atypical facial pain. Students receive CO grading in the fall and pass/fail grade and credit are awarded in spring.

ORPT 703. Oral Diagnostic Sciences Pathology Senior Selective. 1 Hour.

Yearlong course; 1.5 clinic hours. 1 credit. Clinic time may be weekly, in block rotation or variable schedule. Enrollment is restricted to students with D4 class status and who are selected to participate. This selective will allow the student to experience a variety of activities in oral and maxillofacial pathology. Students will learn how a biopsy specimen is processed into a slide, how pathologists make diagnoses and how pathology is a critical component in multidisciplinary patient care. Students will be exposed to oral pathology as a career and will learn the process of running a lab. Students with interest in performing biopsies in practice and those interested in an oral surgery residency, oral medicine residency, oral pathology residency or a dental oncology fellowship will find this selective beneficial. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

ORPT 732. Clinical Oral Pathology and Oral Medicine. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Designed to provide students with the knowledge to recognize, diagnose and treat the common diseases/conditions found in dental practice. Graded as pass/fail.

ORPT 737. D3 Radiology Rotation. 1 Hour.

Yearlong course; 1 clinical hour. 1 credit. This two-semester progressive clinical science course prepares the predoctoral dental student to be a competent practitioner of oral and maxillofacial radiographic technique and diagnostic interpretation. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

Oral Surgery (ORSG)**ORSG 622. Introduction to Oral Surgery. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Designed to introduce the second-year student to basic principles in oral surgery. The course prepares the student for entry into the oral surgery clinical rotation.

ORSG 700. Senior Selective in Oral and Maxillofacial Surgery. 1 Hour.

Semester course; 46 clinical and 4 didactic hours. 1 credit. Prerequisites: successful completion of ORSG 622, 731, 733, 739, D4 class standing and permission of the course director. This elective will allow a qualified student the opportunity to observe and/or participate in a variety of activities in oral and maxillofacial surgery that extend beyond the standard undergraduate curriculum.

ORSG 701. D4 Elective in Basic Concepts in Outpatient Anesthesia. 1.5 Hour.

Yearlong course; 1 lecture and .5 clinic hours. 1.5 credits. This elective will allow a qualified student the opportunity to observe and/or participate in a variety of activities in outpatient anesthesia that extend beyond the standard D.D.S. curriculum. Graded CO in the fall semester with a pass/fail grade and credit awarded in spring.

ORSG 731. Medical Management of Emergency Care Dental Patients. 2 Hours.

Semester course; 2 lecture contact hours. 2 credits. Students develop an understanding of systemic and medical conditions which may influence the provision of dental care by a provider. The course also is aimed at enabling students to incorporate the importance of medical conditions which directly impact dental treatment planning.

ORSG 733. Principles of Oral and Maxillofacial Surgery. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. A lecture series designed to provide a foundation of professional knowledge associated with the surgical skills to fully enable the student to diagnose, treat and, when necessary, refer oral and maxillofacial surgical problems encountered in general practice.

ORSG 739. Clinical Oral Surgery III. 2.5 Hours.

Yearlong course; 120 clinical hours. 2.5 credits. Entails clinical rotations through the OMS clinic. An entry-level clinical course designed to provide practical experience in basic oral surgery and observation of the more complex procedures performed by oral and maxillofacial surgeons. Students receive a grade of CO for fall, with a P/F grade and all credit hours earned in spring. Students receive a grade of CO for fall, with a P/F grade and all credit hours earned in spring.

ORSG 749. Clinical Oral Surgery IV. 2 Hours.

Yearlong course; 2 clinical hours (80 contact hours). 2 credits. Provides the senior dental student with rotation-based clinical experience in which they further refine and develop their skills in clinical oral surgery and medical assessment of the patient for surgery. Cases treated by the senior student in this rotation are generally more complex (medically and surgically) than those treated in ORSG 739. Course graded as CO in the first semester with P/F grade awarded upon completion of second semester.

Orthodontics (ORTH)**ORTH 532. Biomechanics: Theoretical Basis for Tooth Movement. 1 Hour.**

Semester course; 15 lecture/seminar hours. 1 credit. Introduces physical science of mechanics and engineering statics as applied to orthodontic force systems. Emphasizes equilibrium and the biological manifestation of force systems applied to the dentition and craniofacial skeleton.

ORTH 620. Orthodontic Clinic for Non-orthodontic Graduate Students. 1 Hour.

Semester course; 30 clinical sessions. 1 credit. Must be taken every semester of the program. Allows residents to diagnose and treat limited orthodontic problems with special emphasis on the primary and mixed dentitions. Includes, but is not limited to, anterior and posterior crossbites, space and tooth loss, transient or definitive crowding and tooth irregularities, oral habits, ectopic and other tooth eruption problems.

ORTH 623. Orthodontics Lecture. 2 Hours.

Semester course; 2 lecture contact hours. 2 credits. An introduction to orthodontics meant to provide second-year dental students with a basic understanding of the diagnosis and treatment of orthodontic problems. The emphasis will be on understanding basic, universally applicable orthodontic concepts rather than on learning specific details relating to particular treatment mechanisms or appliances. This is consistent with current trends in the specialty, which recognize that orthodontic solutions are often attainable by many routes, with a common goal of maximizing the functional, esthetic and stable end result. There will be an overview of growth and development, emphasizing how favorable or unfavorable growth may influence orthodontic diagnosis and treatment. A detailed description of the development of occlusion will also be presented with an emphasis on recognizing and diagnosing abnormalities related to tooth eruption and craniofacial growth.

ORTH 650. Literature Review. 2 Hours.

Semester course; 30 seminar hours. 2 credits. Must be taken every semester of the program. Reviews classical articles in areas of special orthodontic interest. Establishes the state-of-the-art and existing information base. Gives special attention to research methodology and conclusions reached.

ORTH 652. Growth and Development. 2 Hours.

Semester course; 30 lecture/seminar hours. 2 credits. Must be taken every semester of the program. Discusses the increases in size and complexity that occur in the craniofacial region including variations in proportionality and related variations in facial form and dental occlusion. Provides special emphasis on compensations in skeletal and soft tissue structures. Examines the basis for prediction of change.

ORTH 654. Orthodontic Diagnosis and Treatment Planning. 2 Hours.

Semester course; 30 seminar hours. 2 credits. Must be taken every semester of the program. Considers and discusses available and theoretical options for clinical management of variations in facial form and dental occlusion.

ORTH 656. Current Literature. 2 Hours.

Semester course; 30 seminar hours. 2 credits. Must be taken every semester of the program. Presents in a journal-club-format evaluation of current information in orthodontics and related disciplines. Includes special emphasis on research methodology and the contributions of current research to advances in orthodontics.

ORTH 658. Analysis of Orthodontic Treatment. 1.5 Hour.

Semester course; 22.5 seminar hours. 1.5 credits. Must be taken every semester of the program. Analyzes cephalometric and other objective measures of the outcomes of orthodontic therapy. Reviews treatment objectives with respect to actual changes effected in patients. Delineates changes resulting from therapy from normal variations in craniofacial development.

ORTH 660. Orthognathic Conference. 1 Hour.

Semester course; 15 seminar hours. 1 credit. Must be taken every semester of the program. Presents patients requiring coordinated orthodontic and oral surgery care. Emphasizes long- and short-term biologic stability of alterations in the structure and function of the craniofacial skeleton with increased emphasis on facial form and dental occlusion.

ORTH 662. Craniofacial Anomalies. 1 Hour.

Semester course; 15 lecture/seminar hours. 1 credit. Must be taken every semester of the program. Discusses the etiology and embryologic basis of congenital and acquired deformities in the craniofacial structures. Emphasizes syndromes with craniofacial manifestations and the diagnosis and treatment planning for patients with facial clefts.

ORTH 680. Orthodontic Clinic. 1-12 Hours.

Semester course; 1-12 clinic hours (three hours per credit). 1-12 credits. Enrollment is restricted to students enrolled in the M.S.D. program. Students will learn the clinical management of orthodontic patients. Involves supervised experiences in treatment of a complete spectrum of normally occurring orthodontic problems in an environment simulating private practice. Must be taken both fall and spring of the first and second years of the program for a total of 10 credits. May be taken without credit in additional semesters as needed to complete clinical training. Graded as pass/fail.

ORTH 700. Senior Selective in Orthodontics. 4 Hours.

Semester course; 4 clinical and 1 seminar hours per week. 4 credits. Prerequisites: successful completion of ORTH 623, ORTH 733, ORTH 739 and permission of the course director. A clinical and didactic course designed for students who wish to gain advanced knowledge of orthodontics in an environment simulating a practice setting. The course will include participation in seminars, clinical activities and hospital rotations for craniofacial patients. The course will extend over the fall and spring semesters and will provide an excellent preparation for students entering the private practice of dentistry or students seeking graduate education in the field of orthodontics. A maximum of four students will be chosen to participate in this selective each year. Graded CO for the fall semester and P/F for the spring.

ORTH 733. Orthodontic Therapy. 1 Hour.

Semester course; 1 lecture contact hour. 1 credit. Consists of didactic lectures, a continuation of ORTH 623.

ORTH 739. Clinical Orthodontics III. 1 Hour.

Yearlong course; 2.5 hour clinic sessions. 1 credit. The purpose of this clinical course is to give the student practical, hands-on, orthodontic diagnosis and treatment experience to supplement the didactic material learned in preclinical orthodontic courses. The student will learn how to diagnose orthodontic problems so that normal developmental processes, minor occlusal discrepancies with simple solutions and more complex problems requiring referral to a specialist may be differentiated. Diagnosis and treatment of cases requiring limited orthodontic therapy will be the focus of the course during the junior year when students will rotate through the orthodontic clinic in eight-week block rotations. Students receive CO grading in the fall and pass/fail grade and credit are awarded in spring.

Pediatric Dentistry (PEDD)

PEDD 511. General Anesthesia Rotation. 3 Hours.

Semester course; 40 clinical sessions. 3 credits. Teaches general anesthesia with special emphasis in pediatrics. Allows students to become knowledgeable in pre-operative evaluation, risk assessment, assessing the effects of pharmacologic agents, venipuncture techniques, airway management, general anesthetic induction and intubation, administration of anesthetic agents, patient monitoring, prevention and management of anesthetic emergencies, recovery room management, postoperative appraisal and follow-up.

PEDD 512. Growth and Development. 1 Hour.

Semester course; 16 lecture/seminar hours. 1 credit. Lecture format provides foundational knowledge on the growth and development of the head and neck to include oral embryology and development of the dentition.

PEDD 514. Introduction to Pediatric Dentistry. 2 Hours.

Semester course; 30 lecture hours. 2 credits. Introduces material in pediatric dentistry. Involves didactic, clinical and laboratory portions.

PEDD 572. Pediatric Dental Emergency Service. 2.5 Hours.

Semester course; 30 clinical sessions. 2.5 credits. Must be taken for two consecutive semesters. Graduate students are scheduled for emergency services on a weekly basis. Offers experience in the assessment and management of orofacial trauma, dental pain and infections.

PEDD 612. Seminar Series: Pediatric Dentistry and Medicine. 2 Hours.

Semester course; 30 lecture/seminar hours. 2 credits. Must be taken every semester of the program. Provides an arena for students to present seminars in either a clinical area or medical conditions of interest to pediatric dentists. Gives students practical experience in giving formal presentations and provides him/her with information related to clinical subject area(s) with medical conditions about which pediatric dentists should be knowledgeable.

PEDD 620. Pediatric Medicine Rotation. 1.5 Hour.

Semester course; 40 clinical sessions. 1.5 credits. Requires students to obtain and evaluate medical histories, parental interviews, system-oriented physical examinations, clinical assessments of healthy and ill patients, selection of laboratory tests and evaluation of data, evaluation of physical, motor and sensory development, genetic implications of childhood diseases, the use of drug therapy in the management of diseases and parental management through discussions and explanations.

PEDD 622. Introduction to Pediatric Dentistry. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Designed to develop the student's knowledge of diagnosis, treatment planning and basic skills for management of the pediatric dental patient. The course is the first of two didactic courses given to the dental student for pediatric dentistry.

PEDD 640. Clinical Teaching. 2 Hours.

Semester course; 25 clinical sessions. 2 credits. May be repeated for credit. Must be taken every semester of the program. Lectures and clinical instruction involving contact with third and fourth-year dental students. Provides teaching experience in diagnosis and treatment planning, restorative preparations and management of children's behavior.

PEDD 650. Literature Review. 2 Hours.

Semester course; 30 lecture/seminar hours. 2 credits. Must be taken every semester of the program. Reviews literature related to all aspects of the pediatric patient. Emphasizes the ability students to discuss the content of the articles and to critically evaluate it. Stresses the integration of new material with previously discussed literature and collateral material. Uses the reading list from the American Board of Pediatric Dentistry.

PEDD 654. Treatment Planning Seminar. 1 Hour.

Semester course; 16 lecture/seminar hours. 1 credit. May be repeated for a total of four credits. Must be taken every semester of the program. Provides diagnosis and treatment planning of the child, adolescent and special patient. Follows up on records on completed cases, which also are presented and evaluated. Discusses the techniques employed and the justification of the treatment.

PEDD 656. Current Literature Review. 1 Hour.

Semester course; 16 lecture/seminar hours. 1 credit. May be repeated for credit. Discusses articles from recent publications relating to all aspects of pediatric dentistry. Covers and critically reviews the Policies and Guidelines of the American Academy of Pediatric Dentistry.

PEDD 680. Pediatric Dental Clinic. 1-4 Hours.

Semester course; 120 clinical sessions. Variable for 1-4 credits. Must be taking both fall and spring of the first and second years of the program for 4 credits each semester. May be taken in additional semesters as needed to complete clinical training; credit will vary based on circumstances. Provides for the clinical management of pediatric dental patients. Provides experiences in the treatment of infants, preschool children, adolescent and special patients. Stresses pharmacological and non-pharmacological techniques and behavior management.

PEDD 700. Senior Selective in Pediatric Dentistry. 1 Hour.

Semester course; 4 clinical hours per week. 1 credit. Prerequisites: successful completion of PEDD 611 and PEDD 733 and permission of the course director. This is a clinical course that provides students with more advanced experiences and techniques in pediatric dentistry.

PEDD 701. Selective in Special Care Dentistry. 1 Hour.

Semester course; 4 clinical hours/week. 1 credit. Prerequisites: D4 standing and selection by course faculty. This course is designed to give the interested student clinical exposure to the comprehensive dental care of individuals who have special health care needs. Graded as pass/fail.

PEDD 730. Special Care Dentistry. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment restricted to dental students with D3 standing. This course is designed to enhance the dental student's understanding of the complexities of providing care for individuals with special health care needs.

PEDD 733. Advanced Pediatric Dentistry. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Designed to supplement and reinforce the student's knowledge of diagnosis, treatment planning and basic skills for management of the pediatric dental patient. This includes a review of basic pediatric clinical procedures and introduction to the treatment of pediatric patients with special needs.

PEDD 739. Clinical Pediatric Dentistry III. 0.5 Hours.

Yearlong course; 24 clinical hours. .5 credit. Clinical rotation course designed to introduce the student to the basics of clinical pediatric dentistry and to prepare the student for PEDD 749. Students receive CO grading in the fall and a letter grade upon completion.

PEDD 749. Clinical Pediatric Dentistry IV. 1 Hour.

Semester course; 48 clinical hours. 1 credit. Enrollment is restricted to students who have successfully completed all prior courses in pediatric dentistry and D4 class standing. This course is offered as a two-week clinical rotation during the senior year of the dental curriculum. Students will build upon and refine the skills developed during the D3 clinical experience. Pediatric dentistry is a unique experience because of the young patient population and psychological skills are centrally important to delivering patient care. The course has a strong emphasis on developing behavioral, communication and patient-management skills.

Periodontics (PERI)**PERI 508. Physical Diagnosis. 2 Hours.**

Semester course; 30 lecture hours. 2 credits. Provides lectures and hands on experience in physical diagnosis, history taking, general physical examination and review of major organ systems.

PERI 511. Anesthesiology Rotation. 1.5 Hour.

Semester course; 45 clinical sessions. 1.5 credits. Provides students with experience in general anesthesia under the direction of the dental anesthesiologist. Emphasizes operating room procedures, airway management, intravenous technique, anesthetics and resuscitative procedures. Includes clinical management of conscious sedation cases.

PERI 512. Conscious Sedation. 2 Hours.

Semester course; 30 lecture/seminar hours. 2 credits. Reviews concepts of parental conscious sedation techniques to include anatomy and physiology of the respiratory, cardiovascular and central nervous system, drug pharmacology, intravenous technique, prevention, recognition and management of complications, management of emergencies, physiologic monitoring and equipment, basic life support and advanced cardiac life support.

PERI 514. Introduction to Periodontics. 3 Hours.

Semester course; 48 lecture/seminar hours. 3 credits. Provides students with an introduction to the clinical practice of periodontics. Emphasizes diagnosis, etiology, prognosis, treatment planning, initial therapy, therapeutic approaches, suturing techniques, oral hygiene and dental photography.

PERI 515. Internal Medicine Rotation. 1.5 Hour.

Semester course; 45 clinic sessions. 1.5 credits. Provides students with experience in internal medicine under the direct supervision of the Department of Internal Medicine. Emphasizes hospital procedures and management of the medically-compromised patient.

PERI 520. Principles of Periodontics. 2 Hours.

Semester course; 30 lecture/seminar hours. 2 credits. Must be taken for two consecutive semesters. Reviews the principles of the basic science of periodontology, including anatomy of the periodontium, classification, etiology, diagnosis, scaling and root planning, and treatment planning. Reviews the indications and contraindications for management of complex periodontal problems. Reviews the principles of non-surgical and surgical techniques.

PERI 525. Diagnosis of Periodontal Diseases. 1 Hour.

The first in a four-part series of didactic courses designed to prepare the dental student for the clinical diagnosis and management of periodontal diseases. Through this course, students will develop a fundamental understanding of how to assess patients for periodontal disease and how to develop a specific diagnosis. Enrollment is restricted to admitted dental students.

PERI 526. Etiology and Pathogenesis of Periodontal Diseases. 1.5 Hour.

1.5 credits. The second in a four-part series of didactic courses designed to prepare the dental student for the clinical diagnosis and management of periodontal diseases. Through this course, students will build upon their knowledge of diagnosis and develop their understanding of the causes, mechanisms and development of periodontal disease. Enrollment is restricted to admitted dental students.

PERI 552. Implantology. 1,2 Hour.

Semester course; 16 lecture/seminar hours. 1 credit. Covers the historical review of dental implants, including biologic principles, techniques and systems; diagnosis, interdisciplinary considerations, treatment planning and indications and contraindications for implants; wound healing for implants, including osseointegration, surgical techniques and implant maintenance. Provides a hands-on technique laboratory.

PERI 619. Clinical Pathology Rotation. 0.5 Hours.

Semester course; 21 clinic sessions. 0.5 credit. Provides instruction in patient assessment, biopsy technique, assessment of tissue preparations and review of oral histologic slide materials.

PERI 627. Non-Surgical Periodontal Therapy. 1.5 Hour.

The third in a four-part series of didactic courses designed to prepare the dental student for the clinical diagnosis and management of periodontal diseases. Through this course, students will add to their skill set a conceptual knowledge of non-surgical treatment options for periodontal disease. Enrollment is restricted to admitted dental students.

PERI 630. Medicine: Oral Medicine Seminar. 1.5 Hour.

Semester course; 26 seminar hours. 1.5 credits May be repeated for credit. Must be taken every semester of the program. Emphasizes diagnosis, pathogenesis, oral manifestations and management of systemic diseases. Reviews the management of the medically-compromised patient, including laboratory procedures, pharmacology, hematology and reviews of the cardiovascular, respiratory, endocrine and neurologic systems. Discusses and critically evaluates medical and oral medicine topics relative to management of the periodontal patient.

PERI 650. Periodontal Literature Review. 3 Hours.

Semester course; 48 seminar hours. 3 credits. Must be taken every semester of the program. Reviews the periodontal literature from early classic articles to current publications pertaining to the scientific basis for periodontal procedures. Reviews the concepts of diagnosis, etiology, epidemiology, pathogenesis, therapy, maintenance of periodontal diseases and implantology. Discusses content of the literature by means of abstracts and study questions.

PERI 654. Treatment Plan: Case Presentations. 1 Hour.

Semester course; 12 seminar hours. 1 credit. Must be taken every semester of the program. Emphasizes the interpretation the medical and dental histories, radiographic and clinical findings, diagnosis, etiology, prognosis, treatment planning, therapy and supportive periodontal care. Discusses the content of reviewed cases by written and oral presentations. Requires the student to assimilate and interpret clinical findings.

PERI 656. Current Literature Review. 3 Hours.

Semester course; 36 seminar hours. 3 credits. May be repeated for credit. Must be taken every semester of the program. Provides an in-depth review of contemporary periodontal literature. Discusses content of the reviewed literature by means of abstracts and discussion.

PERI 680. Clinical Periodontics. 0.5-12 Hours.

Semester course; 1.5-36 clinic hours. 0.5-12 credits. Enrollment is restricted to students in the M.S.D. program. Provides supervised training in periodontics. Provides the student with the experience in the treatment and management of patients with various types and severities of periodontal diseases. Emphasizes diagnosis, treatment planning, prognosis, scaling and root planing, non-surgical and surgical techniques. Provides experience in the treatment of advanced periodontal cases and more complex surgical techniques including preprosthetic, orthodontic, periodontal plastic and mucogingival procedures, guided tissue regeneration, guided bone regeneration and implant surgical techniques. Must be taken for seven credits in the fall and 8.5 credits in the spring of the third year of the program for a total of 15.5 credits. May be taken for additional semesters as needed to complete clinical training, but additional credits will not apply towards degree completion. Graded as P/F.

PERI 700. Advanced Periodontal Selective. 1.5 Hour.

Yearlong course; 15 seminar and 25 clinical hours. 1.5 credits. Prerequisites: successful completion of all prior courses in periodontics and permission of the course director. This course is offered to dental students who demonstrate high academic achievement and are interested in expanding their practical knowledge and experience in periodontal surgical procedures. It is designed to enhance the general dentist's knowledge regarding indications, diagnosis and treatment planning of periodontal surgical procedures and to provide hands-on experience in applying techniques of surgical periodontal procedures suitable for judicious use in general dental practice. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

PERI 719. Specialty Practice Management. 0.5 Hours.

Semester course; 22 seminar hours. 0.5 credit. Must be taken for two consecutive semesters. Provides the student with experience in office management. Requires visits to specialty offices to familiarize the student with contemporary modes of practice administration and patient management.

PERI 733. Surgical Periodontal Therapy. 1 Hour.

1 credit. The fourth in a four-part series of didactic courses designed to prepare the dental student for the clinical diagnosis and management of periodontal diseases. Through this course, students will complete their didactic exploration of periodontal diseases with a conceptual knowledge of surgical treatment options for periodontal diseases. Enrollment is restricted to admitted dental students.

PERI 739. Clinical Periodontics III. 5 Hours.

Yearlong course; clinical contact hours. 5 credits. The primary objective of the department is to provide an educational experience that will enable the dental student to meet the periodontal needs of present and future patients. These objectives necessitate student awareness of the biology of the periodontium and pathology of gingival and periodontal diseases; the ability to examine, diagnose and develop a treatment plan for the patient with significant periodontal disease; and an understanding of the implications of periodontal diagnosis and treatment on the oral and general health of the patient. The student should also be competent in plaque control, scaling, root planing and other procedures ordinarily included in presurgical phases of therapy. The student should be familiar with the entire scope of periodontal therapy, understanding the rationale and indications for surgical treatment and anticipated results.

PERI 749. Clinical Periodontics IV. 1 Hour.

Yearlong course; 1 clinic session per week. 1 credit. This final clinical course in periodontics provides competency assessment of the dental student as an entry-level dentist in the diagnosis and management of patients with periodontal diseases. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

Prosthodontics (PROS)**PROS 500. Advanced Biomaterials in Prosthodontics. 1 Hour.**

Semester course; 1 seminar hour. 1 credit. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. Students will learn basic material science and clinical applications of contemporary biomaterials used in prosthodontic therapy. The course will include physical properties of non-elastomeric and elastomeric materials, polymethylmethacrylate and related polymers, composite resins and other operative materials, cements and luting materials, metal alloys in dentistry, materials used in CAD/CAM dentistry, and dental implant materials, as well as current literature in prosthodontic biomaterials research. Graded as pass/fail.

PROS 501. Prosthodontics Case Presentation and Interdisciplinary Seminar. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for credit. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. Residents will present their case to residents and faculty from advanced education in general dentistry, graduate periodontics, endodontics, orthodontics and oral and maxillofacial surgery. The case presentation will include pre-operative conditions, diagnosis and treatment planning process using evidence-based principles, treatment sequences, as well as prognosis and post-treatment assessment. Graded as pass/fail.

PROS 502. Digital Technology Prosthodontics. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Must be taken for two consecutive semesters. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. Students will learn the clinical and laboratory principles of digital technology in prosthodontics. The seminar will cover the overview of digital applications in dentistry, intraoral scanners, digital prosthodontic software designs and virtual articulators, principle and practice of CAD/CAM dentistry, 3D printing/additive manufacturing, digital dentistry in fixed prosthodontics, digital dentistry in removable partial denture therapy, and digital complete dentures. This course will present the overall use of digital technology and its clinical and laboratory applications. Graded as pass/fail.

PROS 503. Prosthodontic Principles. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for credit. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. The course emphasizes the principles of prosthodontic therapy including all basic aspects of prosthodontics, including complete denture prosthodontics, removable partial denture prosthodontics, fixed prosthodontics, implant prosthodontics, occlusion, esthetics, craniofacial anatomy and physiology related to prosthodontics, as well as prosthodontic diagnosis and treatment planning. This course will emphasize the clinical applications of different theoretical principles in prosthodontics. Graded as pass/fail.

PROS 600. Advanced Prosthodontics. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for credit. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. This course covers the advanced applications of prosthodontic therapy including the principle of full-mouth rehabilitation, diagnosis and treatment for temporomandibular disorders and orofacial pain, evidence-based prosthodontic therapy, ethics and professionalism in prosthodontics, pre-prosthodontic surgery, prosthodontic care for geriatric patients, maxillofacial prosthetics, and common medical emergencies in prosthodontics. The course will emphasize the clinical applications of advanced clinical prosthodontics. Graded as pass/fail.

PROS 601. Surgical and Prosthodontic Principles of Implant Therapy. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for credits. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. Students will learn the surgical and prosthodontic principles of implant therapy. The seminar will include wound healing, infection control, anatomy and physiology related to prosthodontic and implant therapy, diagnostic imaging and cone-beam computed tomography technology, diagnosis and treatment planning for implant therapy, common hard and soft tissue augmentation procedures in implant dentistry, guided implant surgery, and management of complications in implant dentistry. Graded as pass/fail.

PROS 624. Preclinical Removable Prosthodontics. 2 Hours.

Yearlong course; 2 lecture hours. 2 credits. An introductory course in removable prosthodontics, including complete dentures and removable partial dentures. Presents the basic information, which is prerequisite for understanding the laboratory procedures and the diagnosis and treatment planning of patients requiring CDs and RPDs. Graded as CO in the fall semester with a letter grade and credit awarded in spring.

PROS 625. Preclinical Removable Prosthodontics Lab. 4 Hours.

Yearlong course; 4 laboratory hours. 4 credits. An introductory course in removable prosthodontics, including complete dentures and removable partial dentures. Presents the basic information, which is prerequisite for understanding the laboratory procedures and the diagnosis and treatment planning of patients requiring CDs and RPDs. This laboratory course provides hands-on skill development of these procedures. Graded CO in fall with a letter grade and credit awarded in spring.

PROS 626. Clinical Principles of Dental Implantology Lecture. 1 Hour.

Semester course. 1 credit. Enrollment restricted to admitted dental students. Offered in tandem with a laboratory course and providing didactic information on the same topic, this course is a preclinical experience for predoctoral students, designed to introduce necessary clinical skills for dental implantology.

PROS 628. Clinical Principles of Implantology Lab. 1 Hour.

Semester course; 48 lab contact hours. 1 credit. Enrollment restricted to admitted dental students. Offered in tandem with a lecture course and providing didactic information on the same topic, this course is a preclinical laboratory experience for predoctoral students, designed to introduce necessary clinical skills for dental implantology. Simulated activities include diagnosis and treatment planning, fabrication of a surgical guide, implant surgery, implant prosthodontic impression making, master cast fabrication, implant crown provisionalization, and implant overdenture treatment skills. Students will see demonstrations of cone-beam CT scan technology, computer-based software for implant surgical treatment planning and computer-based CAD-CAM design for custom implant abutments.

PROS 656. Literature Review in Prosthodontics. 1 Hour.

Semester course; 1 seminar hour. 1 credit. May be repeated for credit. Enrollment is restricted to students in the prosthodontic concentration of the M.S.D. program. Residents will present the classic and current literature on a rotation basis through topics in fixed prosthodontics, removable prosthodontics, implants and implant therapy, occlusion, esthetics, biomaterials, digital technology, prosthodontic diagnosis and treatment planning, temporomandibular disorders and orofacial pain, pre-prosthetic surgery, geriatric considerations in prosthodontic care, and maxillofacial prosthetics. The course will train students to use the principles of evidence-based dentistry to evaluate classic and current literature as well as create a culture of self-learning and lifelong learning. Graded as pass/fail.

PROS 680. Clinical Prosthodontics. 1 Hour.

Semester course; 3 clinic hours. 1 credit. May be repeated for credit. Enrollment is restricted to students in the M.S.D. program. The clinical course is intended for all prosthodontic residents. The clinical experience will include but not be limited to complex fixed and removable prosthodontics, complete denture prosthodontics, implant prosthodontics and maxillofacial prosthodontics. The course is designed to provide residents with a wide range of types of patients and patient care with state-of-the-art technology. The residents will provide prosthodontic care together with other dental specialties in an interdisciplinary manner. A daily case presentation and faculty feedback will be given to individual residents. At the end of the semester, it is expected that the student summarize their experience and present their case at the interdisciplinary conference. May be taken without credit in additional semesters as needed to complete clinical training. Graded as pass/fail.

PROS 700. Senior Selective in Advanced Clinical Prosthodontics. 4 Hours.

Yearlong course; 1 lecture and 3 clinical hours. 4 credits. This class is a two-semester clinical elective course designed to develop advanced skills in treating prosthodontic cases beyond the level of basic clinical competency required for graduation. Students receive CO grading in the fall and a pass or fail grade and earned credit in the spring.

PROS 731. Complete Denture Prosthodontics. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Designed to present the current concepts, principles and diagnostic techniques required to diagnose, treatment plan and predict the outcome of the treatment of edentulous patients and patients requiring a single denture against natural teeth. Acceptable clinical procedures are presented for the management of patients that fall into the above categories. Correlation of basic and clinical science is emphasized, as well as the prosthodontic ramifications of the mechanical and behavioral sciences.

PROS 735. Removable Prosthodontics Diagnosis and Treatment. 1.5 Hour.

Semester course; 1.5 lecture contact hours. 1.5 credits. Designed to prepare students to apply their preclinical removable prosthodontic knowledge and skill in the clinical setting. Focuses on the diagnosis and treatment planning aspects of clinical care.

PROS 739. Clinical Fixed Prosthodontics III. 2 Hours.

Yearlong course; 2 clinical hours. 2 credits. This course builds on preclinical laboratory skills developed in D1 and D2 years and applies them to fixed prosthodontic patient care in the clinical setting. Graded CO in the fall semester with a pass/fail grade and credit awarded in spring.

PROS 740. Clinical Removable Prosthodontics. 3.5 Hours.

Yearlong course; 3.5 clinical hours. 3.5 credits. Prerequisite: PROS 624. This course builds on technical skills developed in PROS 624 (D2 year) and applies them to patient care in the clinical setting. Graded CO in the fall semester with a pass/fail grade and credit awarded in spring.

PROS 749. Clinical Prosthodontics IV. 2 Hours.

Yearlong course; 2 clinic hours (one clinic session per week averaged over the year). 2 credits. This capstone course provides clinical experience in basic fundamental prosthodontic procedures, including diagnosis, management and treatment of patients in need of reconstructive fixed, removable or implant prosthodontic care. The course also includes both technical and competency assessment of the dental student's skills as an entry-level general dentist. Students receive CO grading in the fall and a pass/fail grade and earned credit in the spring.

School of Medicine

Graduate Medical Education (GMED)

GMED 600. Research for Residents and Fellows. 2 Hours.

Semester course; 2 contact hours. 2 credits. Prerequisites: second year of medical training or beyond, plus approval of residency/fellowship program director. Course restricted to physician trainees (M.D., M.B.B.S., D.O.). This course is designed to be an introduction to research for medical residents and fellows. Teamwork activities will focus on the application of concepts so that participants get "hands on" experience with topics discussed in class: formulating a research question, selecting a study design, choosing appropriate biostatistical analyses, designing a survey, writing an IRB proposal and understanding the responsible conduct of research and protection of human subjects. The class will culminate in a required final assignment in the form of a capstone project.

Medicine (MEDI)

MEDI 694. Pediatric Psychology Practicum. 1-3 Hours.

Semester course; one-half day per credit. 1-3 credits. Available only to graduate students in clinical or counseling psychology that are approved by the instructor. A series of training experiences designed to facilitate skill development in pediatric psychology and enhance effectiveness as a pediatric psychologist working within a medical setting. Trainees are given an opportunity to apply and practice diagnostic interviews, patient education, brief consultations and diagnostic and therapeutic skills with a pediatric population. Students will learn to effectively communicate and function as part of an interdisciplinary team in an academic medical setting. Careful supervision and evaluation of the student is provided.

MEDI 695. Independent Study in Health Psychology. 1-3 Hours.

Semester course; 1-3 contact hours. 1-3 credits. Approval from faculty member required. Provides the opportunity for students to explore a special topic of interest in the area of health psychology under the direction of a faculty member. A proposal for a topic of study and anticipated timeline for completion must be submitted to and approved by the faculty mentor; credits will be assigned commensurate with the complexity of the project. Arrangements are made directly with the appropriate faculty member. Graded as S/U/F.

School of Pharmacy

Medicinal Chemistry (MEDC)

MEDC 526. Research Techniques in Medicinal Chemistry. 1-4 Hours.

Semester course; 0-2 lecture and 2-8 laboratory hours. 1-4 credits. The theory and application of classical, instrumental, and computer techniques used in medicinal chemistry research are presented.

MEDC 527. Basic Pharmaceutical Principles for the Practicing Pharmacist. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines basic science principles in organic chemistry and biological chemistry as specifically related to the pharmaceutical treatment of disease.

MEDC 530. Bioinformatics and Genomics in Drug Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Covers the basic elements of cellular pathways and drug interactions, and how modern genomics comes into play. Presents bioinformatics principles being used every day in data-intensive fields of research. Introductory and concept-oriented, the course will prepare students for grasping how bioinformatics is being used in many areas of biomedical sciences. Geared toward students coming from a variety of backgrounds in biology, biochemistry and chemistry. While many of the analytical approaches are statistical in nature, there is no requirement for a background in statistics or mathematics. Each student will have the opportunity to design a small project applying bioinformatics concepts. Crosslisted as: BNFO 530.

MEDC 532. Medicinal Chemistry for Nurse Anesthetists. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A review of the principles of organic chemistry and bio-organic chemistry presented as a series of lectures covering the structure-activity relationships, metabolism, and mechanism of action of selected agents.

MEDC 533. Pharmacognosy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Designed to introduce the basic concepts of pharmacognosy that apply to crude drugs and semipurified and purified natural products that are typically available in pharmacies. The regulation of herbal products and evaluation of the purity and bioavailability of alternative and complementary medicines will be discussed.

MEDC 541. Survey of Molecular Modeling Methods. 1 Hour.

Semester course; lecture and laboratory hour. 1 credit. Introduces computational chemistry and molecular graphics with the current software used for drug design and small molecule/large molecule interactions. Computational chemistry problems will be emphasized in the laboratory.

MEDC 542. Biotechnology-derived Therapeutic Agents. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Provides the fundamentals of biotechnology-derived biological agents including structure, manufacture, stability, analysis, formulation and usage. Selected examples of biological agents in current and future therapy may also be covered.

MEDC 553. Concepts in the Medicinal Chemistry of Therapeutics Agents. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Introduces topics in medicinal chemistry common to all drug classes, including structure activity relationships, principles of drug action, drug design and drug metabolism. Drugs acting on the autonomic nervous system are presented as a case study illustrating applications of the general principles.

MEDC 555. Fundamentals of Drug Discovery I. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Students will work individually or in groups to learn the fundamentals of medicinal chemistry and drug discovery. The course utilizes formal lectures, informal group discussions, literature research and formal oral and/or written assignments to impart knowledge and practice of drug discovery. The course focus will be on molecular biology and pharmacological aspects of medicinal chemistry.

MEDC 556. Fundamentals of Drug Discovery II. 3.5 Hours.

Semester course; 3.5 lecture hours. 3.5 credits. Students will work individually or in groups to learn the fundamentals of medicinal chemistry and drug discovery. The course utilizes formal lectures, informal group discussions, literature research and formal oral and/or written assignment to impart knowledge and practice of drug discovery. The course focus will be on methodologies and techniques of medicinal chemistry.

MEDC 591. Special Topics in Medicinal Chemistry. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. A course in which students may choose to participate in individual or group study in one or more areas of medicinal chemistry. The course can take the form of formal lectures, informal group discussions, literature research and/or laboratory research. Students must have the permission of the individual instructor before registering for this course.

MEDC 601. Advanced Medicinal Chemistry I. 2.5 Hours.

Semester course; 2.5 lecture hours. 2.5 credits. This course is designed to expose graduate students to the history and practice of medicinal chemistry with an emphasis on drug development, design, structure-activity relationship studies and their association with diseases to prepare students for future work in academia or industry.

MEDC 609. Advanced Organic Synthesis: A Target-oriented Approach. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A study of chemical transformations in organic chemistry, their mechanisms and their application to the synthesis of complex target molecules.

MEDC 610. Advanced Medicinal Chemistry II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: MEDC 601 or permission of instructor. Introduces concepts for understanding the medicinal chemistry of the central nervous system.

MEDC 614. Research Techniques. 1-4 Hours.

Semester course; variable hours. Variable credit. Credit will be given on the basis of 1 credit per 45 hours of laboratory time. Prerequisite: approval of research adviser. Provides new graduate student with the laboratory skills necessary to perform research in the chosen discipline. The training time required will depend upon the discipline. Graded as pass/fail. Crosslisted as: PCEU 614/PHAR 614.

MEDC 620. Advanced Medicinal Chemistry III. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: MEDC 601 or the permission of the instructor. Reviews the concepts necessary for enzyme inhibitor design. Emphasizes the design of new agents to treat disease states by enzyme inhibition.

MEDC 630. Theoretical Methods in Drug Design. 2 Hours.

Semester course; lecture and laboratory hours. 2 credits. Prerequisites: MEDC 601, MEDC 610 or MEDC 620, or permission of instructor. A study of the theoretical methods of drug structure-activity analysis, including molecular orbital theory, topological indexes and physical property correlations. Computational chemistry problems will be emphasized in the laboratory.

MEDC 642. Nucleoside, Nucleotide, Carbohydrate and Peptide Chemistry. 3 Hours.

Semester course; 1 lecture hour. 1 credit. Surveys nucleoside, nucleotide, carbohydrate and peptide chemistry with emphasis on their synthesis.

MEDC 643. Regioselective Drug Metabolism. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Surveys drug biotransformation reactions. Emphasizes the molecular aspects of Phase I and Phase II drug metabolism.

MEDC 644. Asymmetric Synthesis. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Reviews the major asymmetric chemical transformations, including mechanisms, scope and synthetic utility.

MEDC 645. Introduction to Heterocyclic Chemistry. 3 Hours.

Semester course; 1 lecture hour. 1 credit. Introduces the chemistry of heterocyclic compounds. Emphasizes heterocyclic nomenclature and the reactions/reactivity of heterocyclic systems.

MEDC 670. Advanced Molecular Modeling Theory and Practice. 3 Hours.

Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisite: MEDC 641 or permission of instructor. Examines the principles and application of computational chemistry and molecular graphics to current problems in drug design. Lectures focus on the application of specific computational methods and techniques to solve problems in drug/molecular design. Workshop sessions provide hands-on experience using state-of-the-art hardware and software for molecular modeling.

MEDC 690. Departmental Research Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Reports presented by students, staff and visiting lecturers, current problems and developments in pharmaceutical and medicinal chemistry are discussed. Graded as PR in first semester of enrollment, with a letter grade assigned in the following semester.

MEDC 691. Special Topics in Medicinal Chemistry. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as a part of the research training.

MEDC 697. Directed Research in Medicinal Chemistry. 1-15 Hours.

Semester course; 1-15 credits. Research leading to the M.S. or Ph.D. degree.

Pharmaceutical Sciences (PSCI)

PSCI 607. Introduction to Pharmaceutical Sciences From Bench to Shelf. 2 Hours.

Yearlong course; 2 lecture hours. 2 credits. The purpose of this course is to familiarize students with the interdisciplinary nature of drug discovery and development, to acquaint them with where their research fits into the bigger drug discovery and development picture and to promote interdisciplinary discussions between the students and faculty. Current scientific, regulatory and health care trends impacting drug discovery, development and use will be discussed. Students will be introduced to current topics in the pharmaceutical sciences such as drug target selection, drug design, discovery and development, the drug approval process and regulatory sciences, product optimization, production, and marketing. Graded as PR in the fall semester with a letter grade and credits awarded in the spring.

PSCI 610. Frontiers of Pharmaceutical Research. 2 Hours.

Semester course; 2 lecture hours. 2 credits. May be repeated for a maximum of eight credits. This is a student-centered training course of scientific presentation and discussion for students using frontier research in pharmaceutical sciences. Students will present research data and/or literature and lead discussions among peer graduate students and faculty. Faculty may take a leading role in some of the classes. Students will also actively participate in small-group discussions led by peer graduate students and faculty.

PSCI 614. Research Techniques. 1-4 Hours.

Semester course; 1-4 lecture hours. 1-4 credits. This course provides new graduate students with the skill set necessary to perform research in their discipline within pharmaceutical sciences. The course will use a combination of lectures, assignments, one-on-one training, laboratory and/or group discussion.

PSCI 690. Seminars in the Pharmaceutical Sciences. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Enrollment is restricted to graduate students in the pharmaceutical sciences programs. The goal of the seminar series is to provide students an opportunity for self-learning. The course will familiarize students with topics of current research interest within the pharmaceutical sciences and related biological sciences, as well as expose students to nationally and internationally renowned scientists.

PSCI 691. Special Topics in Pharmaceutical Sciences I. 0.5-5 Hours.

Semester course. 0.5-5 lecture hours. 0.5-5 credits. Subject matter is presented by lecture, tutorial studies and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training. Graded S/U/F.

PSCI 692. Special Topics in Pharmaceutical Sciences II. 0.5-5 Hours.

Semester course; 0.5-5 lecture hours. 0.5-5 credits. Subject matter is presented by lecture, tutorial studies and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

PSCI 701. Post-candidacy Doctoral Research. 9 Hours.

Semester course; 9 research hours. 9 credits. May be repeated for credit. Enrollment is restricted to graduate research assistants or graduate teaching assistants who have been admitted to doctoral candidacy in the School of Pharmacy. Students will participate in supervised discipline-specific research related to their dissertation topic. Students must have approval from their current degree program coordinator to register. This course can be approved as a substitution for any post-candidacy degree requirement (e.g. directed research). Graded as satisfactory/unsatisfactory.

Pharmaceutics (PCEU)**PCEU 507. Pharmaceutics and Biopharmaceutics I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to describe the physico-chemical and biopharmaceutical principles fundamental to the development of pharmaceutical dosage forms. Topics will include pharmaceutical calculations, solid-state properties, solubility, partitioning, solution properties, disperse systems, micromeritics, diffusion, dissolution and release rates, drug and dosage form stability and degradation, pharmaceutical manufacture, and compounding.

PCEU 508. Pharmacokinetics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PCEU 507. Corequisite: PCEU 509. Major topics include the mathematical and physiological principles of pharmacokinetics related to the development and use of pharmaceutical dosage forms. Discussions will include compartmental modeling, physiological concepts of pharmacokinetics, and clearance and absorption concepts. Also includes material related to statistics.

PCEU 509. Pharmaceutics and Biopharmaceutics II. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PCEU 507. Designed to describe the biopharmaceutical principles fundamental to the development of pharmaceutical dosage forms, including parenteral products, solutions, disperse systems, semisolids, solids and novel drug delivery systems. The formulation, manufacture, control, biopharmaceutics and relevant patient-pharmacist interactions of the major dosage forms will be addressed and presented by route of administration.

PCEU 604. Molecular Pharmaceutics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of course coordinator. The student's basic biochemistry and pharmacy education will be expanded with emerging molecular concepts in enzyme and transporter structure and function, roles in drug disposition, pharmacogenomics, biochemistry, molecular biology, and experimental techniques.

PCEU 612. Advanced Physical Pharmacy and Biopharmaceutics. 3-5 Hours.

Semester course; 3 credits. Phase equilibria and phase transfer kinetics related to biopharmaceutics will be covered. The relationship between physicochemical properties of a drug dosage form and drug absorption, along with the correlation between in vitro tests used to evaluate dosage forms and in vitro measures of drug absorption will be covered. The course assumes that the student has a basic understanding of pharmacokinetics, physical chemistry and statistics.

PCEU 614. Research Techniques. 1-4 Hours.

Semester course; variable hours. Variable credit. Credit will be given on the basis of 1 credit per 45 hours of laboratory time. Prerequisite: approval of research adviser. Provides new graduate student with the laboratory skills necessary to perform research in the chosen discipline. The training time required will depend upon the discipline. Graded as pass/fail. Crosslisted as: MEDC 614/PHAR 614.

PCEU 615. Applied Pharmacokinetics. 2.5 Hours.

Semester course; 2.5 lecture hours. 2.5 credits. Extends the concepts of pharmacokinetics as applied to dosage regimen design, pharmacokinetic variability, drug interactions and statistical strategies for individualization of drug therapy. Lectures and conferences take place throughout the semester.

PCEU 621. Advanced Pharmaceutics and Drug Disposition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination and pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

PCEU 622. Clinical Pharmacokinetics. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction. (Nontraditional program).

PCEU 624. Advanced Pharmacokinetics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An advanced treatment of the kinetics of drug absorption, distribution, and elimination utilizing mathematical models, and digital computers for analysis of linear and nonlinear biologic systems.

PCEU 625. Pharmaceutical Analysis. 4 Hours.

Semester course; 3 lecture and 1 laboratory hours. 4 credits. Theory and practice of selected analytical techniques for the quantitative analysis of drugs in body fluids and other matrices. Emphasis is on method validation, and immunoassay methodologies. Laboratory sessions will provide "hands on" experience with modern methods of drug analysis.

PCEU 626. Pharmaceutical Analysis Laboratory. 1 Hour.

1 lecture hour. 1 credit. Prerequisite: PHAR 625. A continuation of PHAR 625 with emphasis on providing advanced topics for analysis of drugs and metabolites.

PCEU 690. Pharmaceutics Research Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmaceutics. Research Seminar.

PCEU 691. Special Topics in Pharmaceutics. 1-5 Hours.

Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the training in research.

PCEU 697. Directed Research in Pharmaceutics. 1-15 Hours.

Semester course; 1-15 credits. Research leading to the M.S., Pharm.D., or Ph.D. degree.

Pharmacy (PHAR)

PHAR 501. Pharmaceutical Calculations. 1 Hour.

Semester course; 1 lecture hour (delivered online). 1 credit. This course is designed in a student-centered learning format that supports self-directed learning. The course will help students develop the skill set needed to screen out the distractors from the determinant variables in a statement problem and guide their thought processes in sequential use of information to solve calculation problems seen in pharmacy practice.

PHAR 509. Evidence-Based Pharmacy I: Introduction to Pharmacy Information Skills. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. This is the first of a three-course series introducing students to information skills necessary for the practice of evidence-based pharmacy. Lecture topics include drug information resources, efficient information retrieval, assessment of drug information sources, relationship of pharmaceutical industry to drug literature, and basic laws and regulations associated with prescription processing. Class exercises will be used to promote the appropriate use of drug information resources in pharmacy practice.

PHAR 512. Health Promotion and Disease Prevention. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Introduction to the role of the pharmacist in health promotion and disease prevention. Skills for pharmacist involvement in implementing aspects of Healthy People 2010, educating patients and addressing health care disparities will be emphasized.

PHAR 513. Contemporary Pharmacy Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. The goal of the course is to introduce students to basic principles of professional patient-centered pharmacy practice. The common thread between the various topics is the link between pharmacists' professionalism and effective medication use. Pharmacists who consistently engage in professional behaviors are better able to serve the health care needs of their patients.

PHAR 515. Continuous Professional Development I. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. This the first of four yearlong courses designed to advance students' professional development. The large- and small-group sessions and co-curricular activities encompass experiences that enhance self-awareness and professionalism in student pharmacists. Graded as CO with no credit for fall semester with a pass/fail and credit assigned for spring semester.

PHAR 523. Foundations I. 1.5 Hour.

Semester course; 4.5 laboratory hours. 1.5 credits. This competency-based course is intended to give the first-year pharmacy student an introduction to the pharmacy profession, emphasizing the skills and values that are necessary to be a competent, caring pharmacist. It is the first in a six-semester practice-based course sequence that introduces the language and tools of contemporary pharmacy practice with an emphasis on calculations, communication, medical terminology, drug information, prescription processing, health promotion, patient assessment and problem solving.

PHAR 524. Foundations II. 1.5 Hour.

Semester course; 4.5 laboratory hours. 1.5 credits. This competency-based course is the second in a six-semester practice-based course sequence with an emphasis on the preparation and dispensing of selected extemporaneous compounds including liquid, solid and semisolid preparations and the appropriate use of selected OTC point-of-care devices.

PHAR 525. Communications in Pharmacy Practice. 2 Hours.

Semester course; 1.5 lecture hours and an average of 1 conference hour per week. 2 credits. A study of the theory and techniques of communication and counseling techniques related to pharmacy practice. Supervised practice in developing basic communication skills.

PHAR 526. Community Pharmacy Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Helps students develop the necessary foundation for the management of activities in community pharmacy practice settings with many of the skills developed in this course being equally applicable to other practice settings. Focuses on financial management and managed care as it affects community practice.

PHAR 529. Clinical Therapeutics Module: Introduction to Special Populations. 2 Hours.

Module course; 2 lecture hours. 2 credits. Introduction to issues affecting the pharmacotherapy of special populations such as pediatric and geriatric patients.

PHAR 530. Introductory Pharmacy Practice Experience: Community Practice. 4 Hours.

Semester course; daily for 4 weeks. 4 credits. Students will meet with an assigned community pharmacist 5 days per week for 8 hours for 4 consecutive weeks at the end of the P-1 year. Students will practice pharmacy under supervision while learning about the medication use system in community pharmacy practice. Students will demonstrate core practice skills: communication, pharmacy calculations, ethics, medication safety, wellness and health promotion, informatics and critical thinking. Graded as honors, high pass, pass, fail.

PHAR 532. Introductory Pharmacy Practice Experience: Hospital Practice. 3 Hours.

Semester course; 40 hours per week for three weeks. 3 credits. Students will meet with an assigned hospital pharmacist for a three-week (120 hours) experience at the end of the P-2 year to practice pharmacy in a hospital environment and learn about hospital pharmacy management and medication distribution systems. Students will demonstrate core practice skills: communication, calculations, ethics, medication safety, technology, informatics and critical thinking. Graded as honors, high pass, pass, fail.

PHAR 533. Introductory Pharmacy Practice Experience: Patient Care. 0.5 Hours.

Semester course; 0.5 laboratory hours. 0.5 credits. Students will complete 20 hours of approved experiences under supervision. An orientation, reading assignments, mandatory class time and assessments will be conducted. Students will also prepare a reflection describing the benefits to the community when pharmacists engage in the health and education needs of the community. Students will develop a sense of personal responsibility for addressing the problems and needs of society. Graded as Pass/Fail.

PHAR 534. Foundations III. 1.5 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1.5 credits. This competency-based course is the third in a six-semester, practice-based course sequence with an emphasis on the clinical application of medications in the management of various disease states. The second-year pharmacy student will develop skills in the assessment and therapeutic monitoring of selected disease states and drug therapies. Topics include cardiovascular, endocrine and pulmonology therapeutics.

PHAR 535. Foundations IV. 1.5 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1.5 credits. This competency-based course is the fourth in a six-semester, practice-based course sequence. Introduces students to the skills required to practice in institutional settings such as hospitals and long-term care facilities and in home health care.

PHAR 540. Self-Care and Alternative and Complementary Treatments. 2.5 Hours.

Module course; variable lecture and conference hours. 2.5 credits. Introduction to the concepts of self-care and alternative and complementary treatments. Students will learn to distinguish treatable signs and symptoms of common diseases and exclusions for care that require referral to appropriate health care practitioners. Non-medication methods to alleviate and prevent self-care problems are reviewed. Patient cases, self-care consultations, lectures and conferences will be used to facilitate learning.

PHAR 541. Patient Assessment in Pharmacy Practice. 2 Hours.

Semester course; variable lecture and laboratory hours. 2 credits. Provides students with an introduction to patient assessment skills necessary in patient-centered pharmacy practice. Course topics include basic physical assessment techniques, interpretation of findings from laboratory tests or physical examinations and documenting findings from patient assessments. Laboratory time will be used to practice various assessment skills. The course will also build on communication and information skills presented in previous courses.

PHAR 544. Clinical Therapeutics Module: Cardiovascular. 4.5 Hours.

Module course; variable hours. 4.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with cardiovascular diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 545. The U.S. Health Care System. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open to professional students only. Designed to introduce the student to the components of the U.S. health care system and the interrelationships among health care consumers and providers. It also presents the organizational framework and regulatory and reimbursement mechanisms which are the foundations of the U.S. health care delivery system. A unique feature of this course is the interdisciplinary teaching team.

PHAR 546. Pharmacy-based Immunization Delivery. 1.5 Hour.

Semester course; 1 lecture and .5 independent study hours. 1.5 credit hours. Enrollment is restricted to students in the Doctor of Pharmacy program. This course, which is based on the CDC's national educational standards for immunization, emphasizes a health care team approach, fosters interventions that promote disease prevention and public health, and prepares pharmacists with the comprehensive knowledge, skills and resources necessary to provide immunization services to patients. This course is associated with the American Pharmacists Association's Pharmacy-Based Immunization Delivery Certificate Program. Each student will receive a Certificate from APhA after successful completion of the course. This course combines self-study course work and didactic live education sessions, along with hands-on administration techniques. Graded as pass/fail.

PHAR 547. Managing Professional Patient-centered Practice. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Introduces pharmacy students to the basic principles of managing a professional pharmacy practice. Students will learn patient-centered practices associated with effective medication use and positive patient outcomes. Instruction will be through lectures, case discussions and portfolio assignments.

PHAR 549. Personalized Medicine. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Provides an introduction to personalized medicine as related to pharmacy practice. The course will be taught using lectures, individual work, small-group discussions and total classroom discussion using homework, in-class assignments and patient case scenarios.

PHAR 550. Pharmacy Practice Research. 3 Hours.

Yearlong course; 3 lecture hours. 3 credits. Focuses on the development of skills necessary for identifying issues and questions related to pharmacy practice, evaluating the literature to identify possible solutions, designing a feasible research project, developing a data analysis plan and a formal written proposal for the project. Students will ultimately present their research proposals to faculty and students. The course is graded as CO with no credit for fall semester with a letter grade and credit assigned for spring semester.

PHAR 551. Pharmacy-based Point of Care Testing. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Enrollment is restricted to Pharm.D. students. This course will be based on the American Pharmacists Association and the University of Florida's Pharmacy-based Test and Treat certificate training program. Each student will receive a certificate from APhA after successful completion of the course. Students will complete the self-study over 10 weeks (asynchronously) prior to the five-week module. Graded as Pass/Fail.

PHAR 555. Clinical Therapeutics Module: Endocrinology. 2.5 Hours.

Module course; variable hours. 2.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with endocrine diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 556. Clinical Therapeutics Module: Neurology. 4 Hours.

Module course; variable hours. 4 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with neurological diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 565. Evidence-based Pharmacy II: Research Methods and Statistics. 2.5 Hours.

Module course; variable hours. 2.5 credits. This is the second of a three-course series introducing students to the principles and practice of evidence-based pharmacy. Lecture topics include research methods, concepts and principles of study design, and appropriate use of statistics. Class exercises promote a working understanding of statistical principles and a general understanding of research methods.

PHAR 566. Evidence-based Pharmacy III: Drug Literature Evaluation. 2 Hours.

Module course; variable hours. 2 credits. This is the third of a three-course series introducing students to the principles and practice of evidence-based pharmacy. Lectures, outside readings, class discussions and exercises will be used to develop the skills necessary for the evaluation of biomedical literature and application to pharmacy practice.

PHAR 602. Clinical Therapeutics Module: Psychiatry. 3 Hours.

Module course; variable hours. 3 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with psychiatric illnesses are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 603. Clinical Therapeutics Module: Respiratory/Immunology. 2.5 Hours.

Semester course; 2.5 lecture hours. 2.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with respiratory and immunologic illnesses are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 604. Clinical Therapeutics Module: Infectious Diseases. 4.5 Hours.

Module course; variable hours. 4.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with infectious diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 605. Clinical Therapeutics Module: Hematology/Oncology. 2.5 Hours.

Module course; variable hours. 2.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with hematologic diseases and cancer are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 606. Clinical Therapeutics Module: Nephrology/Urology. 2 Hours.

Module course; variable hours. 2 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with kidney and urologic diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 607. Clinical Therapeutics Module: Dermatology/EENT. 2 Hours.

and Joint Module course; variable hours. 2 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with diseases of the bone, skin, ears, eyes, nose and throat are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 614. Research Techniques. 1-4 Hours.

Semester course; variable hours. Variable credit. Credit will be given on the basis of 1 credit per 45 hours of laboratory time. Prerequisite: approval of research adviser. Provides new graduate student with the laboratory skills necessary to perform research in the chosen discipline. The training time required will depend upon the discipline. Graded as pass/fail. Crosslisted as: PCEU 614/MEDC 614.

PHAR 615. Continuous Professional Development II. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. This the second of four yearlong courses designed to advance students' professional development. The large- and small-group sessions and co-curricular activities encompass experiences that enhance self-awareness and professionalism in student pharmacists. Graded as CO with no credit for fall semester with a pass/fail and credit assigned for spring semester.

PHAR 618. Clinical Therapeutics Module: Gastrointestinal/Nutrition. 2.5 Hours.

Module course; variable hours. 2.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with gastrointestinal diseases are integrated in this course. Nutrition will be covered. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 619. Clinical Therapeutics Module: Women's Health/Bone. 2 Hours.

Module course; variable hours. 2 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in women's health issues and patients with bone diseases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, non-prescription and complementary treatments will be reviewed.

PHAR 620. Clinical Therapeutics Module: Critical Care/Toxicology and Complex Patients. 2.5 Hours.

Module course; 2.5 lecture hours. 2.5 credits. The principles of medicinal chemistry, pharmacology, pharmaceuticals, pathophysiology and pharmacotherapy to the application of drug therapy in patients with critical care diseases, toxicology emergencies and complex cases are integrated in this course. The clinical presentation, course of illness, prevention and treatment of diseases using prescription, nonprescription and complementary treatments will be reviewed.

PHAR 621. Pharmacoeconomics. 2 Hours.

Module course; variable hours. 2 credits. Introduces the terms and processes of pharmaceutical economics and pharmacoeconomics. Students learn to assess the impact of economics on pharmaceutical use, evaluate pharmacoeconomic studies and make decisions on the cost effectiveness of therapeutic alternatives. Lectures, discussion and class assignments.

PHAR 623. Patient Medication Safety. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Provides the fundamental background necessary to understand patient medication safety, including multidisciplinary responsibilities for medication safety and approaches to the management and prevention of medication errors. Current issues in medication safety and actual medication error cases will be used in the class.

PHAR 626. Advanced Pharmacotherapy Research Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the instructor. This course focuses on research techniques used to assess the clinical response to drug therapy, including advantages and disadvantages of different techniques. Published clinical trails are evaluated to illustrate these concepts including statistical assessment. Recent FDA New Drug Applications are reviewed when appropriate to illustrate regulatory aspects of the evaluation of clinical trials.

PHAR 631. Advanced Pharmacy Practice Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Classical, social, and systems views of management are introduced with emphasis on the uses of implicit control. The sociology of professions and the nature of professional work are explored; the management of the professional's work is discussed in detail. Design and operation of integrated drug information, drug distribution, and drug use control systems is explored. (Nontraditional program).

PHAR 637. Introduction to Research Methods in Pharmaceutical Sciences. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Assists practicing pharmacist managers and researchers in the development, implementation, monitoring and evaluation of programs for the delivery of pharmaceutical care and the practice of pharmacy. Introduces students to the empirical method and to provide them with a fundamental knowledge base for developing salient research questions that could lead to the articulation of testable research hypotheses, accomplished by addressing those research techniques and designs most commonly used in pharmacy and health services research.

PHAR 638. Pharmaceutical Benefit Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Addresses the need for pharmacy benefit management, the types of organizations that use pharmacy benefit management and the primary tools, techniques and practices used to manage the pharmacy benefit. Presents through lectures, readings, class discussions and a research paper.

PHAR 640. Foundations V. 1.5 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1.5 credits. This competency-based course is the fifth in a six-semester practice-based course sequence with an emphasis on the clinical application of medications in the management of various disease states. The third-year pharmacy student will develop skills in the assessment and therapeutic monitoring of selected disease states and drug therapies. Topics include psychiatry, neurology and oncology therapeutics.

PHAR 645. Foundations VI. 1.5 Hour.

Semester course; 1 lecture and 2 laboratory hours. 1.5 credits. This competency-based course is the final installment in a six-semester, practice-based course sequence. It is intended to give the third-year pharmacy student opportunities to improve acquired skills and gain additional skills necessary to provide the highest level of patient-centered care by optimizing drug therapy outcomes.

PHAR 646. Ambulatory Care Pharmacy in the Free Clinic Setting. 2 Hours.

Semester course; 1 lecture and 1 clerkship (experiential education) hour. 2 credits. Enrollment is restricted to current P3 students in the Pharm.D. program. This course includes lectures, case discussions, clinical experience, quizzes, reflections, student self-evaluation and case presentations. Students will participate in four six-hour sessions in an interprofessional practice at a free clinic over the semester, as well as periodic on-campus discussions to reinforce clinical learning. Class discussions may require prereadings and Blackboard readiness quizzes. Graded as pass/fail/honors.

PHAR 652. Health Promotion and Communication in Pharmacy Practice. 2.5 Hours.

Semester course; 2.5 lecture hours. 2.5 credits. An introduction to the role of the pharmacist in health promotion and disease prevention and building communication skills to help prepare students for practice. Supervised practice in developing basic communication skills. Skills for pharmacist involvement in implementing aspects of Healthy People 2020, educating patients and addressing health care disparities will be emphasized.

PHAR 660. Community Pharmacy Practice Management II. 1.5 Hour.

Semester course; 1.5 lecture hours. 1.5 credits. Enrollment is restricted to Pharm.D. students. This course helps students develop the necessary foundation for the management of activities in community pharmacy and any other practice settings. The course focuses on helping students understand what it takes to offer clinical services in pharmacy settings and be able to develop plans to implement them.

PHAR 663. Advanced Diabetes Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An in-depth study of the care of patients with metabolic syndrome and diabetes. The etiology, pathophysiology, clinical course, clinical manifestations, prevention and management of diabetes will be reviewed through the use of online didactic presentations, patient cases, self-directed learning and active participation in classroom discussion. Emphasis is placed on the use of data to optimize pharmacotherapy for patient scenarios.

PHAR 664. Making Medicines: The Process of Drug Development. 1 Hour.

Semester course; 1 lecture hour (delivered online). 1 credit. This is a self-paced, eLearning course developed in collaboration with a team of academic leaders designed to deliver a scientific education curriculum highlighting the fundamental processes and rigor drug manufacturers undertake to research, develop and deliver new medicines to patients. Graded as Pass/Fail.

PHAR 665. Residency and Fellowship Preparatory. 1 Hour.

Semester course; 1 lecture hour (delivered online or face-to-face). 1 credit. Intended for third-year Pharm.D. students interested in pursuing postgraduate training (residency, fellowship, etc.). This course will include readings, lectures, topic discussions, panel discussions, classroom activities and out-of-class assignments. Some of the topics include, but are not limited to, letters of intent, reference letters, interviewing and preparing for American Society of Health-System Pharmacists midyear clinical meeting and/or personal placement service. Graded as Pass/Fail/Honors.

PHAR 666. Advanced Topics in Pharmacy. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. Presentation of pharmacy subject matter by lectures, conferences or clinical site visits in selected areas of advanced study providing a discussion of topics beyond that provided in the required curriculum.

PHAR 667. Seven Habits of Effective Pharmacists. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course is intended to provide students with an overview of what constitutes emotional intelligence and how they can harness that knowledge to become better practitioners. Structured around Stephen Covey's "7 Habits of Highly Effective People," students will spend time learning how to understand and use EI skills in their own personal, as well as professional, life's journey. Graded as Pass/Fail/Honors.

PHAR 668. Academic Pharmacy. 3 Hours.

Semester course; 2 lecture and 1 practicum hours. 3 credits. Prerequisite: PHAR 523 with a minimum grade of B. Enrollment requires approval by course coordinators. This course is for third-year Doctor of Pharmacy students interested in exploring or pursuing a career in academia. Students will learn the structure of academia, types of research, teaching methods and core concepts of academia through weekly two-hour didactic instruction and service in PHAR 523 as small-group facilitators, volunteer patients, proctors and classroom facilitators. Graded as Pass/Fail/Honors.

PHAR 669. Pediatric Pharmacy Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Students will develop and apply a systematic process for assessing, treating and creating a monitoring plan for a pediatric patient. Students will be required to integrate new knowledge regarding the pathophysiology, clinical presentation and treatment of selected pediatric diseases with the basic principles of pediatric clinical pharmacology previously learned in the core Doctor of Pharmacy curriculum. The course will be taught through lecturers with expert pediatric knowledge in their respective specialties. Student and faculty will deliver presentations, case workshops, drug information questions and individual quizzes, and a post-assessment examination will be used to help students learn and apply basic course concepts. Students interested in specializing in pediatric pharmacy or who would like to gain more experience in pediatrics are the intended audience. Graded as Pass/Fail/Honors.

PHAR 670. Geriatrics – Demystifying a Population. 2 Hours.

Semester course; 2 lecture hours. 2 credits. This course employs an interprofessional team approach to teach key concepts in comprehensive geriatric care. The course aims to develop students' geriatric knowledge base and clinical reasoning skills. Students will also gain experience working in teams and sharing information.

PHAR 671. Applied Pharmacoeconomics and Outcomes Research. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Presents theoretical and practical topics relating to pharmacoeconomics and health outcomes research. Students will learn to critically appraise and discuss pharmaceutical outcomes research through lectures, readings, class participation and projects. Requires students to plan, initiate and present an outcomes research project that considers both clinical and economic issues of product or service selection.

PHAR 672. Advances in Mental Health Pharmacy Practice. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Students choose the topics for discussion in this elective course. They actively learn through small group discussions of the pharmacotherapy of psychiatric disorders. Students gain experience in patient rounds, practice-based projects, interpretation of clinical practice guidelines, use of the Internet and computer presentations.

PHAR 673. Advanced Cardiovascular Pharmacotherapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PHAR 544. Students will gain a broader knowledge and deeper understanding of the etiology, pathophysiology, clinical course, clinical manifestations, prevention and management of cardiovascular disorders through the use of online didactic presentations, videos, patient cases, self-directed learning and active participation in classroom discussion.

PHAR 677. Advanced Infectious Diseases Pharmacotherapy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. The specialty of infectious diseases includes diagnosis, pathophysiology, treatment and monitoring of patients with infections. It also includes ensuring appropriate use of antimicrobials in order to mitigate antimicrobial resistance progression. The pharmacist's contribution in this area is primarily in the appropriate selection, use and monitoring of antimicrobial therapy. This course serves as an advanced introduction to the use of antimicrobial agents, with emphasis on selected disease states, microbiological and laboratory aspects and antimicrobial stewardship principles.

PHAR 685. Contemporary Topics in Pharmacy. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Explores how pharmacists prepare for and respond to the issues that affect the practice of pharmacy. Contemporary issues that relate to major health care needs, government health care activities, views by health professionals, health policies, health care economics, pharmacist attitudes and behaviors, pharmacy laws and regulations, pharmacy traditional views and opinions will be examined. Discussion and debate on these issues will help to prepare students for their future in pharmacy practice.

PHAR 688. Applied Pharmacoepidemiology Research Methods. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EPID 571 and BIOS 544 or permission of instructor. Provides an overview of the field of pharmacoepidemiology and its relationship to health care and research. Topics including selecting data sources, study design, data manipulation and analytical issues relevant to the conduct of pharmacoepidemiology research are covered. Students complete exercises to reinforce these topics, as well as prepare a formal project proposal. Research studies are also reviewed to help students develop skills in the critical evaluation of the pharmacoepidemiology literature.

PHAR 689. Pharmaceutical Policy Analysis. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 500 or ECON/HADM 624, or permission of instructor. Examines a breadth of pharmaceutical policy issues pertaining to stakeholders in health care including the federal government, state governments, the pharmaceutical industry, pharmacies and pharmacists, and consumers. Using an economic approach to policy analysis, various competing thoughts and challenges to health care will be presented. Special attention will be paid to theoretical foundations and scientific rigor in approaching policy analysis.

PHAR 690. Pharmacy Research Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmacy. Research seminar.

PHAR 691. Special Topics in Pharmacy. 1-5 Hours.

Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject matter is by lectures, tutorial studies and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training. Graded as honors, high pass, pass, fail.

PHAR 697. Directed Research in Pharmacy. 1-15 Hours.

Semester course; 1-15 credits. Research leading to the M.S., Pharm.D., or Ph.D. degree.

PHAR 715. Continuous Professional Development III. 1 Hour.

Yearlong course; 1 lecture hour. 1 credit. This the third of four yearlong courses designed to advance students' professional development. The large- and small-group sessions and co-curricular activities encompass experiences that enhance self-awareness and professionalism in student pharmacists. Graded as CO with no credit for fall semester with a pass/fail and credit assigned for spring semester.

PHAR 724. Pharmacy Law. 2.5 Hours.

Semester course; 2.5 lecture hours. 2.5 credits. A study of federal and state laws, including statutes, regulations and cases, affecting the practice of pharmacy and the distribution of drugs. This course includes material on ethics.

PHAR 730. Continuous Professional Development IV. 0.5 Hours.

Yearlong course; 0.5 lecture hours. 0.5 credits. This the fourth of four yearlong courses designed to advance students' professional development. The large- and small-group sessions and co-curricular activities encompass experiences that enhance student pharmacists. Graded as CO with no credit for fall semester with a pass/fail and credit assigned for spring semester.

PHAR 760. Acute Care Pharmacy Practice I. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in an acute care hospital setting. Students will actively participate in the delivery of patient care on a general medicine service. Students may participate in the following types of activities: rounding with a health care team, obtaining patient histories, identifying problems requiring therapeutic interventions, solving problems, consulting with physicians, monitoring patient outcomes and providing educational sessions for the professional staff. These services are expected to be integrated with the hospital pharmacy services. Graded as H/HP/P/F.

PHAR 761. Advanced Hospital Pharmacy Practice. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in a hospital pharmacy department. Students will actively participate in pharmacy operations and services relating to systems for drug distribution and drug control, scope of clinical services provided by the department, management of the department, and department relationships within the institution and health system. Graded as H/HP/P/F.

PHAR 762. Geriatrics Pharmacy Practice. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in a variety of settings with a predominately geriatric focus. These sites may include community pharmacies, specialty clinics, rehabilitation hospitals, skilled nursing facilities, home-based consult services and assisted living facilities. Students will focus on the unique medication-related needs of seniors and actively apply that special knowledge to provide quality pharmacy care to older adults. Graded as H/HP/P/F.

PHAR 763. Ambulatory Care Pharmacy Practice. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in an ambulatory care, multidisciplinary practice setting. These sites may include hospital-based clinics, physician group practices, safety net clinics and managed care facilities that provide health care directly to patients. Students will actively participate in obtaining patient medical and medication histories, evaluating drug therapies, developing pharmacy care plans, monitoring patients' therapeutic outcomes, consulting with physicians and non-physician providers and providing education to patients and health care professionals. Graded as H/HP/P/F.

PHAR 764. Community Pharmacy Practice. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in all facets of pharmacy practice in the community pharmacy setting. Students will be involved in dispensing, compounding, telephone consultation, patient counseling and nonprescription drug recommendations. Students also will be involved in patient assessment, monitoring intervention and follow-up care designed to improve the outcomes of drug therapy. Graded as H/HP/P/F.

PHAR 765. Elective I. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. In this course, students will be able to participate in a variety of pharmacy practice settings. Graded as H/HP/P/F.

PHAR 766. Elective II. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. In this course students participate in a variety of pharmacy practice settings. Graded as H/HP/P/F.

PHAR 767. Clinical Selective I. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. Restricted to Pharm.D. dual-degree candidates. In this course students participate in a clinical rotation and may choose one of these pharmacy practice settings: ambulatory care, acute care, advanced community, institutional or geriatric. Graded as H/HP/P/F.

PHAR 768. Advanced Community Pharmacy Practice. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in a community pharmacy setting. Students will focus primarily on patient care services and secondarily on patient-focused dispensing functions in these pharmacies. These services will focus on the identification, resolution and prevention of medication-related problems dealing with general medicine issues and medication therapy management. Students will actively participate in the following types of activities: interacting with patients, caregivers and prescribers; counseling, self-care consults and recommendations; administration of immunizations; and health and wellness screenings and information. Graded as H/HP/P/F.

PHAR 769. Clinical Selective II. 5 Hours.

Semester course; daily for 5 weeks (200 clinical hours). 5 credits. Restricted to Pharm.D. dual-degree candidates. In this course students participate in a clinical rotation and may choose one of these pharmacy practice settings: ambulatory care, acute care, advanced community, institutional or geriatric. Graded as H/HP/P/F.

PHAR 771. Student Pharmacist Professionalism. 1 Hour.

Continuing course; variable hours. 1 credit at end of four-year curriculum. Selected presentations and activities related to the development and enhancement of professional behavior in student pharmacists. Graded as CO until final semester, with pass/fail awarded on completion.

PHAR 773. Acute Care Pharmacy Practice II. 5 Hours.

Semester course; daily for 5 weeks. 5 credits. This course consists of 200 hours of advanced pharmacy practice experience in an acute care hospital setting. Students participate in the delivery of patient care in a general medicine or a medical specialty service. Students may participate in the following types of activities: rounding with a health care team, obtaining patient histories, identifying problems requiring therapeutic interventions, solving problems, consulting with physicians, monitoring patient outcomes and providing educational sessions for the professional staff. These services are expected to be integrated with the hospital pharmacy services. Graded as H/HP/P/F.

Center for Interprofessional Education and Collaborative Care

Interprofessional Education and Collaborative Care (IPEC)

IPEC 501. Foundations of Interprofessional Practice. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Open to students enrolled in a professional health science degree program. An introductory study of the concept of interprofessional collaborative practice, this course includes units on health care systems, teams and teamwork, and professional roles and responsibilities. Students actively work within interprofessional student teams to apply course content during specific learning activities that build a foundation of the knowledge, skills and attitudes necessary for effective interprofessional practice in contemporary health care.

IPEC 502. Interprofessional Quality Improvement and Patient Safety. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to students in the College of Health Professions and the schools of Medicine, Nursing and Pharmacy. A study of interprofessional quality improvement and patient safety, this course includes units on quality in the workplace, error in the health care system and improving health care. Students actively work within interprofessional student teams to apply course content to specific learning activities for interprofessional quality improvement and patient safety practice. Graded as pass/fail.

IPEC 510. Interprofessional Communication and the Care Coordinator I. 1 Hour.

Semester course; 1 lecture hour (delivered online). 1 credit. Defines the various roles of the care coordinator. Identifies all health care providers on the interprofessional team and what their responsibilities are to patient and family care. Focuses on development of effective interprofessional communication and leadership strategies by introducing concepts of teamwork. Explores strategies for conflict negotiation and patient engagement. Facilitates the sharing of individual perspectives and patient care experiences.

IPEC 511. U.S. Health Care and Care Coordination. 2 Hours.

Semester course; 2 lecture hours (delivered online). 2 credits. Explores the overall infrastructure of the health care system and care delivery models. Introduces concepts of regulation. Examines how the effect of different settings and levels of care impact care transitions. Explores effective use of the electronic health record. Identifies the patient-centered care model as integral to improving outcomes. Describes the best ways to share information across health care settings during care transitions.

IPEC 512. Health Care Payment Models and Care Coordination. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Examines aspects of health care financing that affect the type of services the care coordinator can provide. Provides an overview of key points related to insurance coverage, including managed care, Medicare and Medicaid. Reinforces the utilization review process and compliance. Discusses an overview of current U.S. health policy with a special focus on vulnerable patients and the importance of population health management.

IPEC 513. Ethical and Legal Considerations in Care Coordination. 2 Hours.

Semester course; 2 lecture hours (delivered online). 2 credits. Focuses on applying ethical decision-making frameworks to analyze ethical dilemmas that occur with patient care and between members of the interprofessional team. Examines care coordinator role conflict between patient advocacy versus health system advocacy. Provides a framework for identifying potential liabilities while working in the care coordinator role. Examines issues surrounding access to care and social justice. Explores legal responsibilities of the care coordinator.

IPEC 514. Hospital-based Care Coordination. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits. Explores care coordination in the hospital setting with a focus on discharge planning, medication reconciliation and effective care transitions out of the hospital. Addresses how to identify those patients who have high risk for excess utilization of hospital resources due to limited financial means, lack of insurance, chronic illness, and/or catastrophic injury. Addresses national recommendations for effective care coordination strategies to improve patient outcomes.

IPEC 515. Interprofessional Communication and the Care Coordinator II. 1 Hour.

Semester course; 1 lecture hour (delivered online). 1 credit. Prerequisite: IPEC 510. Reinforces roles and responsibilities of health care providers on the interprofessional team during care coordination and prepares students to assume a professional role. Applies effective interprofessional communication and leadership strategies by reinforcing concepts of teamwork. Explores strategies for conflict negotiation and patient engagement. Facilitates the sharing of individual perspectives and patient care experiences.

IPEC 516. Community-based Care Coordination. 3 Hours.

Semester course; 3 lecture hours (delivered online). 3 credits.
Prerequisites: IPEC 511, IPEC 512, IPC 513, IPEC 514 and IPEC 515.
Enrollment is restricted to students in the care coordination certificate program. Emphasizes the value of maintaining a primary care provider and connecting the patient with appropriate community resources. Emphasis will be on the patient-centered medical home model of health care delivery, which provides an environment conducive to direct coordination of a patient's primary care with a special focus on effective care transitions. Discusses concepts of advanced care planning, medication management and patient engagement from the outpatient perspective. Identifies how to differentiate high-risk patient populations and provide effective transitions of care within community settings. Introduces concepts of population health and the role of the family in care of the patient.

IPEC 525. Mindfulness Practices for Health Care Professionals: Clinical Applications. 1 Hour.

Semester course; 16 hours (lecture/seminar). 1 credit. Open to health care professional students in good standing (e.g. students in the schools of Dentistry, Nursing, Medicine, Pharmacy, Allied Health Professions or Social Work or in the programs of dental hygiene or clinical psychology). This course will allow a qualified health care professional student the opportunity to participate in a variety of mindfulness practices and learn their applications to clinical practice.

IPEC 528. Global Health and Health Equity. 1 Hour.

Semester course; 1 lecture hour. 1 credit. This course will cover health disparities, health equity, international health, and being a community member as well as a provider and advocate for the community. The course will focus on practicing health care in a low-resource setting, health disparities that exist in these settings, and the concepts and goals of what it means to be a health care provider in low-resource settings both domestically and abroad. Participation in a health services brigade is not required. Graded as Pass/Fail.

IPEC 561. IPE Virtual Geriatric Case. 2 Hours.

Semester course; 2 lecture hours (delivered online). 2 credits. Health professional learners from multiple disciplines will collaborate to identify health care needs and plan care for an older adult. Contemporary theoretical concepts and evidence-based recommendations will be integrated within a complex, unfolding case that crosses all settings of care: ambulatory, inpatient, post-acute, community-based and palliative/end-of-life. Patient- and family-centered care concepts will also be emphasized throughout each module. Learners who participate in this preceptor-supervised virtual case will make decisions based on their discipline-specific geriatric/gerontological competencies, practice identifying and retrieving evidence to fill gaps in knowledge, reinforce understandings about the scope of practice for other health professions, and expand working capacity for interprofessionalism and team-based care. Graded as pass/fail.

IPEC 562. IPE Quality Improvement Project Practicum. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Prerequisite: IPEC 502 or HADM 609 or approval by course director. Enrollment restricted to students in the schools of Allied Health Professions, Medicine, Nursing and Pharmacy. This capstone course will provide interprofessional teams of students the opportunity to apply quality improvement processes and patient safety theories, models, methods, and tools in a health care setting to execute a quality improvement project in an organizational setting. Graded as Pass/Fail.

IPEC 563. Interprofessional Complex Care Coordination. 2-3 Hours.

Semester course; 2-3 lecture hours. 2-3 credits. May be repeated for a maximum of six credits. This course focuses on the health care utilization of complex patients and identifies root causes of patients who require frequent health care services. Students actively explore topics such as how social determinants impact health, motivating change in others, how best to link complex patients to community services, the complexity of medication adherence and the importance of interprofessional teams to future professional success. Students build confidence in interprofessional health care delivery by working within interprofessional student teams to apply concepts of care coordination to complex patients. Graded as pass/fail.

IPEC 591. Interprofessional Special Topics. 1-3 Hours.

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit. Explores specific topics in interprofessional education and collaborative care theory and practice. Sections may include lecture and/or clinical hours. See Schedule of Classes for topics offered each semester. Graded as pass/fail.

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